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SUPPORT FOR LINUX CONTINUES TO GROW

New tools, Asian influence, corporate sponsorship highlight LinuxWorld

BY ALEX HANDY
SAN FRANCISCO

— Some of the biggest names in the industry turned out at the LinuxWorld Conference and Expo held here at the Moscone Convention Center in early August, heralding a new era of corporate acceptance of the open-source operating system.

More than 11,000 attendees were on hand, according to conference organizers, as were some new trends for the Linux industry. Chief among them is the acceptance in the business



world that open-source software can be a profitable business, albeit in more roundabout ways than many companies are used to.

While some companies, such as **ActiveGrid**, maker of a LAMP-based server solution, offer their tools with no strings attached, they charge per-seat and per-server fees for service agreements and support contracts. Other companies, such as **Funambol**, maker of a mobile applications server, offer their

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EJB Mapping Gets Go-Ahead From Eclipse

Oracle leads; JBoss, SolarMetrics join effort to simplify data persistence

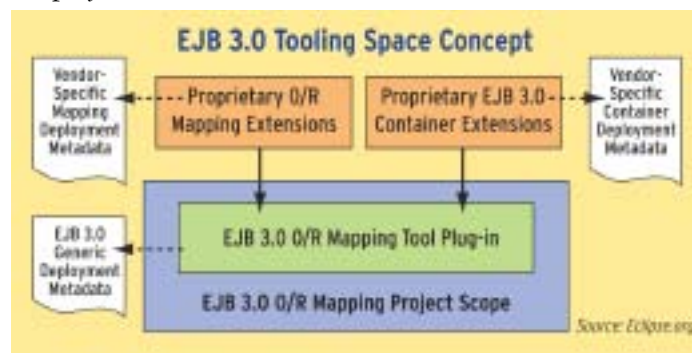
BY JENNIFER DEJONG

Oracle was expected to announce at the EclipseWorld conference in New York on Aug. 29 that its proposal to lead the EJB 3.0 Object-Relational Mapping Project has been accepted by the Eclipse Foundation. The company also will announce that JBoss and SolarMetrics have joined the project.

"We will work together to determine what the project will look like," said Oracle's director of Java tools, Dennis MacNeil.

The project's goal is to create tools to build applications based on the EJB 3.0 specification (JSR 220), which aims to provide a simpler, less code-intensive way to persist objects

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The Eclipse EJB 3.0 Object-Relational Mapping Project plans tools that let Java developers deploy Enterprise JavaBeans to any Java EE application server with just a few lines of code.

'Hey, You Got Tools in My Process'

Agile project offerings look at integrating IDEs, methods

BY JENNIFER DEJONG

Agile and tools. Time was when those two words were never uttered in the same breath.

Doing so would fly in the face of the "Manifesto for Agile Software Development," which proclaims: "Individuals and interactions over processes and tools."

But, increasingly, makers of software for managing agile projects are eyeing integration with the mega-IDEs, and Microsoft plans support for agile projects in Visual Studio.

"In the early days of agile, only heretics used tools," said

Liz Barnett, a Forrester analyst who follows agile development. But that is no longer true.

Boulder, Colo.-based Rally Software recently released a beta version of a plug-in that lets teams using Rally Release 5, its software for managing agile projects, integrate with the Eclipse framework. The company is considering a comparable plug-in for Visual Studio, said Rally's vice president of product marketing, Richard Leavitt.

"Some agilists will throw their arms up and say, 'The tool is forcing me to behave in this

manner,'" Leavitt said. But some degree of integration with IDEs makes sense, he added. The Web Services API for Reading and Updating Tasks lets developers make changes in Eclipse and roll them up into reports generated by Rally's software.

Atlanta-based VersionOne does not provide a comparable plug-in. Asked if the company plans to do so, CEO Robert Holler said: "We are looking at integration. Potentially there's a touch point, but it's a loose touch point." He did not elaborate, but his view is in line with Rally's.

Integration with agile project management offerings could be beneficial, from a rolling up and reporting standpoint, he said.

AGILE VALUES STILL HOLD

Even as they begin to embrace IDEs, agile project management players aren't parting ways with their agile values.

"There is tremendous pressure from top management for visibility into software development projects," said Barnett. "Project management tools can provide that visibility. But they have to get the data from somewhere." And the IDEs, particularly those geared to life-cycle management, can provide that data, she said.

Development environments should lie beneath, not on top of, agile projects, said Holler. In the agile arena, the most important thing is flexibility, and enforcing agile methodologies in the IDE would dictate how development teams work. "And that, by nature, is not very agile," he said.

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SPECIAL REPORT

They've Got Diplomas,
But Do They
Have Skills?32



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ASP.NET Toolkit Targets Mixed-Environment Shops

Source code lets developers customize connections to different data sources

BY JENNIFER DEJONG

Microsoft last month delivered a toolkit for Web developers working in mixed environments, outlining how it will work with some of the features expected in the forthcoming ASP.NET 2.0.

ASP.NET 2.0 Provider Toolkit (msdn.microsoft.com/asp.net/provider) is aimed at developers using Microsoft's Web technology in mixed computing environments, where Access, Active Directory and SQL Server aren't necessarily the norm. "What about user data sitting in other data stores?" asked Microsoft's Brian Goldfarb, product manager for Web platform and tools. "You don't want to throw away what you've got."

The toolkit does not offer precoded connections to DB2, Oracle, MySQL or other non-Microsoft offerings. Instead, it supplies the source code that shows how some of the new productivity features in ASP.NET 2.0 are implemented against the Microsoft Access database. By examining the source code, developers can create what Microsoft calls "custom providers," to work with any data store. "If you are connecting to an IBM mainframe, you can see how the connection was coded in Access and implement it on your own," said Goldfarb. Used throughout ASP.NET 2.0, the provider model lets developers plug in custom providers (or those offered by Microsoft) without

having to alter the rest of the application accordingly, he said. "The front-end piece still works, even if I change the back-end data store."

Microsoft has promised to

deliver ASP.NET 2.0, a component of the .NET Framework 2.0, in November, along with Visual Studio 2005 and SQL Server 2005. At that time, the company also expects to release

additional toolkits, providing source code for using SQL Server, SQL Server Express and Windows Active Directory and Authorization Manager, Goldfarb said. ■

ASP.NET 2.0: THIS TIME IT'S PERSONAL

Whether supplied by Microsoft or built by developers, the ASP.NET 2.0 Provider Toolkit is intended for use with some of the new productivity features planned for ASP.NET 2.0 that help personalize Web applications, including:

Membership: Lets developers create, persist and maintain credentials for Web site users who have registered as members. Accomplishing that in earlier versions of ASP.NET required a lot of hand-coding, said Brian Goldfarb, Microsoft's product manager for Web platform and tools.

Role Manager: Automates the process of switching content based on a Web site member's specified

role. For instance, a news site may deliver free, generic content to some members, while offering higher-value content, sold by subscription, to others.

Profile: Simplifies the steps in tracking personalization information by creating a database that associates saved information with a particular user, and persists indefinitely.

Web Parts: Essentially "encapsulated functionality" used to present information such as weather reports or movie listings that are tied to a particular ZIP code, said Goldfarb. Users can position Web parts on the page, according to personal preference.

—Jennifer deJong

With SAAS, Sales and Support Are the Same

BY JENNIFER DEJONG

In the traditional software market, sales and support are two separate functions.

Companies license their commercial offerings, then typically look to local channel partners to deliver support.

But that's not so in the emerging market for delivering software as a service (SAAS), where sales and support are tightly intertwined. Because customers pay on a per-user, per-month basis, delivering first-rate support is central to

getting customers to renew. To date, that has left resellers largely out of the game.

"Most SAAS providers are selling direct, so support is provided directly, too," said IDC analyst Amy Konary. The established reseller channel isn't really set up to handle the subscription-based model. "They are used to being compensated upfront for Great Plains [Microsoft's accounting software], which could cost US\$250,000—not getting \$400 a month for a service," she said.

But if the SAAS market is to realize predictions for growth, that has to change. "Direct sales force and telesales can only scale so far," she said.

FEWER CRIES FOR HELP

To keep customers renewing, you have to show them as much support as possible, said Rosie Hausler, vice president of marketing for Pleasanton, Calif.-based Nsite, which delivers its workflow automation software as a service. "The recurring model behooves us to be responsive."

One thing that has helped that effort is that hosted applications are inherently easier to support than software that is sold upfront. Companies that opt for the traditional sales model are forced to support several versions simultaneously, but at any given time SAAS providers support only one release, said Susan St. Ledger, senior vice president of global services at San Francisco-based Salesforce.com, which sells customer relationship management software by subscription. "There are deep support costs associated with older versions," she said. Another advantage: Because customers aren't running the software on their own servers, they don't call as often. In the traditional software model, a large percentage of support calls arise from problems associated with operating software on the server side, St. Ledger explained.

And when SAAS users do pick up the phone, it's easy for support reps to zero in on their computer screens. "It's two minutes for me to log into their account and see what they are seeing," said Peter Cervieri, senior vice president of ScribeStudio, a New York-based company that delivers a SAAS offering for authoring training and education applications.

PROACTIVE PLANS

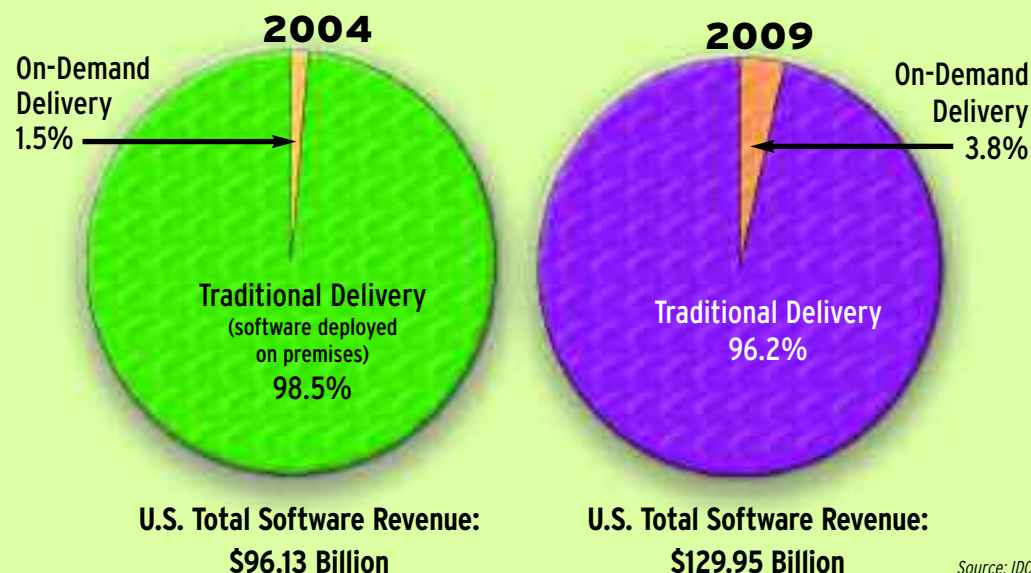
Most SAAS providers offer several levels of support, said IDC's Konary. The first line of defense, typically included in the subscription price, includes Web-based resources, such as answers to frequently asked questions, and basic phone support, where customers can ask support reps straightforward how-to questions, such as how to create a report, said Salesforce.com's St. Ledger. More advanced queries, such as how to integrate with a customer database, typically involve paid contracts, she said. The highest level of help is likely to include round-the-clock phone support, as well as proactive measures on the providers' part, such as calling customers to see if they have any concerns.

SAAS providers keep costs in check by addressing the most common needs before they arise. For instance, Nsite provides precoded snippets that make it easy to connect Nsite's workflow automation software to Salesforce.com's CRM offering, or to that of its competitor, Siebel CRM OnDemand. "We make the integration easy," said Hausler. To stay ahead of the game, Salesforce.com analyzes support calls to see which ques-

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A SLIGHTLY BIGGER PIECE OF THE PIE

U.S. software on-demand delivery (software delivered as a service) revenue share of total software revenue:



Orion: Platform Gives Developers License

BY DAVID RUBINSTEIN

Around-the-clock operations support, scalability to 5 million users, and APIs that enable rapid integration into Java and .NET applications are among the new features of Orion 2.0, the Inter-

net-based network licensing platform from Santa Clara-based Agilis Software that will be released later this month.

The Orion platform offers product and feature activation control, floating license setup,

license key distribution, software asset tracking and reporting to allow software vendors to see how their software is actually being used within an organization, and for the organization itself to make better-informed

decisions on future software licensing, according to Dominic Haigh, vice president of business development at Agilis. Orion runs on any Java application server.

The platform also comes

with the Orion Proxy Server, which can be used in applications that have no Internet access, or in organizations that have secure networks and which must communicate through a "demilitarized zone," said Vinay Sabharwal, who is both CEO and CTO of Agilis.

"The Proxy Server can relay license requests back and forth to the outside world through a DMZ, which is usually a limited number of machines with both internal and external access," he explained.

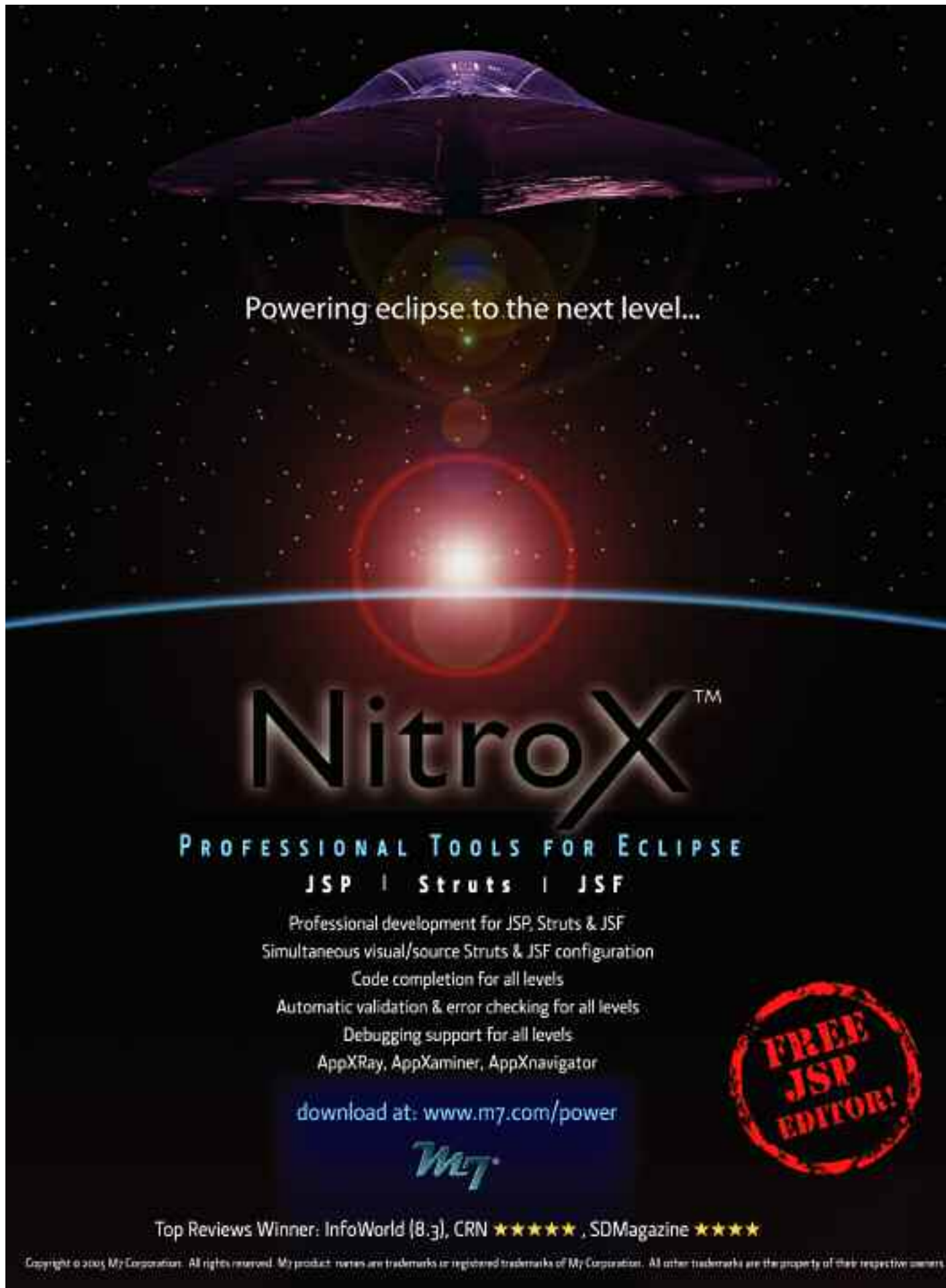
Sabharwal said this capability separates Orion from other product licensing solutions. "We didn't have to adopt new technologies into an older architecture," he said.

Internet-based license activation, Haigh said, provides vendors with flexible business models and the ability to track how their products are being used, while giving customers convenience without being intrusive. The platform's order management system uses an API to configure a license in Orion, including what period of time the license covers and which features of the software need to be activated, he explained. A serial number is sent to the desktop, which the user is prompted to input at activation. Each time the application runs, it interrogates a local key to learn its limits, Haigh said.

"Under the covers, Orion generates a key kept on the local machine," added Sabharwal. "The user can deactivate it on one machine and activate it on another," locking the application out on the first machine, he noted.

Another key differentiator, Sabharwal said, is that the network license server within Orion allows ISVs to set up anonymous or named-user licenses to change access to software features by role. A user can be a desktop machine, a terminal server or a browser host address, he said.

Further, there is no "heart-beat" between the application and the service, another fundamental difference from other solutions, he said. "We store the record on individual users in the license server. When the license is checked out, it is maintained in persistence on the license server." Users can choose to use overdraft protection to continue working in cases where connectivity to the server is lost, he added. ■



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Patterns Designed to Deliver the Message

New IBM offerings aim to help with building, managing an enterprise service bus

BY JENNIFER DEJONG

IBM has designed six new messaging patterns that may eventually make their way into its software development platform.

The company released on its developerWorks resource site last month WebSphere Platform Messaging Patterns Asset. The set of six patterns takes

advantage of the messaging engine included in WebSphere Application Server 6.0 to provide an easier way to build, configure and manage an enter-

prise service bus, said Angel Diaz, IBM's director of on-demand development.


Essentially a means of imparting best practices, pat-


terns are reusable assets that allow one developer to successfully repeat a design that already has been built by another. They aim to provide solutions to recurring problems that developers face, such as how an application gets to a database, or how it locks out resources, explained Grant Larsen, a model-driven development specialist at IBM.

Patterns often take the form of paper-based designs. But because the new messaging patterns are aimed at software architects modeling the messaging piece of an application, they have been encoded as models based on the Unified Modeling Language, he said. There are patterns for JMS message handling, message logging, XSLT transformation, event sequencing and for configuring bus and JMS resources on WebSphere Application Server 6.0, according to IBM's site.

Because the UML-based patterns are designed to be used in Rational Software Architect (part of the role-based Rational Software Development Platform), they can generate code, which developers can incorporate in an application, Larsen said.

To access the patterns, developers can download Rational Software Architect (www.ibm.com/developerworks/downloads/r/rswa) and connect to the Rational XDE Repository. ■





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TEST PATTERNS

Message Delegate: Creates a client to send a message over Java Message Service.

Message Logger Mediation: Logs messages into a database for auditing purposes.

XSLT Mediation: Provides code written in XSLT to transform messages from one format to another.

Mediation List Handler: Sequences events that must occur.

Service Integration Bus: Configures bus resources on WebSphere Application Server 6.0.

JMS Connection: Configures JMS resources on WebSphere Application Server 6.0.

Source: IBM

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Static? Dynamic? Binary? What Should You Test for

BY DAVID RUBINSTEIN

Is static source-code analysis the best type of security vulnerability testing? Should binary analysis be done only on third-party software, for which the

team likely has no access to the source? Is dynamic analysis something that occurs too late in the development life cycle to be cost-effective?

The job of making sure

applications cannot be exploited has been moving from the network administrators up to quality assurance and development, so different tactics need to be employed by each of the

roles. "Dynamic analysis applies to QA," said Erik Peterson, director of product management at SPI Dynamics. "In development, [static analysis] lets developers dig in to look at

code and other aspects of an application to see the security posture from that perspective."

ANALYZE THESE

The most common types of analysis vendors and analysts describe are binary, static, runtime and dynamic. However, there is confusion as to what these mean; often, the analysis of an application as it is running will be called binary, runtime and dynamic analysis.

Binary analysis means the analysis of compiled, not assembled, code, or of an executable when the source code is not available, such as when companies wish to do security vulnerability tests on third-party software, according to Jerry Brady, chief technology officer at Secure Software.

Static analysis looks at the source code, providing the complete picture of the application but also pointing up flaws in code that won't really negatively impact the application. SPI Dynamics' Peterson went on to describe runtime analysis as performance analysis, watching data flow through the application, for example, to measure response times and checking on the data flowing in and out of memory and registries. He called dynamic analysis the real-world probing of applications with requests against the application's "attack surface."

Brady acknowledged that vendors need to do a better job of instructing the industry as to which type of analysis is best at which point in the life cycle. "The information security industry has had a tendency to be disconnected from software development," he acknowledged.

Secure's director of product management, Dale Gardner, said his company is moving away from providing binary analysis, noting that their customers did not see that as a priority. Brady agreed with this trend, saying, "In the last three to five years, almost all commercial vendors have changed their licenses regarding reverse engineering," which gives users of that software the ability to test or exercise the application by effectively duplicating it.

He is of the mind that vendors want to do their own testing so they can focus development efforts on new software with new

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Security Leaks, and When?

revenue streams and not have to retain so large a maintenance staff to work with people in the field who have uncovered bugs. Letting their customers dig in to the software results only "in lumpy labor costs and bad press," Brady said.

Also, he said, the focus on vulnerability remediation has shifted more toward software that moves money or data—an area into which organized crime has reportedly been heading—and away from commodity software that tends not to be cash-rich.

SPI Dynamics believes that developers should do static analysis to determine the true boundaries of an application, and to determine if any back doors have been left, for example, and then use dynamic analysis to prove they exist. "If you had 100 different developers, they would code an application 100 different ways," Peterson said. "A static tool tells them, 'Trust me. This code is bad.'"

Secure's Brady pointed out that it's too expensive to try to fix all the vulnerabilities that could be found in dynamic analysis. If you do static analysis correctly, he maintained, you should get to a staging phase when all dynamic testing is for assurance. "If the first time you catch a problem is in dynamic analysis, you've got cost problems," he said.

'NO SINGLE BULLET'

Microsoft, long considered the poster child of vulnerable applications, in March updated a paper called "The Trustworthy Computing Security Development Lifecycle," which sprang from the infamous Trustworthy Computing speech delivered by Bill Gates in 2002. Essentially, Microsoft believes security is something that needs to be thought of during design, coding and testing of software, and that it must be easy and have senior-level buy-in to be done effectively. "We have found that there is no single silver bullet" for dealing with security, said Eric Bidstrup, a member of Microsoft's security team.

Visual Studio 2005 will have a number of new tools to help developers deal with application security, including MSF Agile, for creating project policies such as requiring static

analysis every time code is checked in to the repository. "We're trying to bake in some best practices," said Microsoft product manager Rick Samona.

Other tools will include FX

Cop for scanning managed code for possible breaches such as SQL injections; PreFast, which scans C++ applications for buffer overruns, memory leaks and uninitialized variables;

Application Verifier, which scans native C/C++ code at runtime looking for heaps, handles and locks; and GS Switch, which is now on by default to break out of an application if a cookie buffer is changed, Samona said. Microsoft also will provide safe CRT libraries, he added.

As for dynamic or static

analysis, Samona said, "Security checks should be applied at different points of the application life cycle. We've spent time and energy raising awareness internally over [such things as] privileges and rights [to handling code]. It's a lesson we've learned the hard way...how to think about testing." ■



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TECHNOLOGIES

As Eclipse Evolves, Better C/C++ Tools Emerge

Project delivers automated builds, code completion, refactoring

BY JENNIFER DEJONG

As the Eclipse C/C++ Development Tools project progresses, it's beginning to offer features found in Java tools.

The Eclipse Foundation was expected to unveil last month an updated version of the CDT project. CDT 3.0 eliminates the need for developers to write

Makefiles, and delivers capabilities such as code completion and refactoring, which are commonplace in Java tools, said Sebastien Marineau, CDT project leader

and senior software architect at Ottawa-based QNX Software Systems. "We have done a lot of work on the foundation."

CDT 3.0 includes a refactor-

ing that lets developers rename classes and methods without having to manually fix every piece of code affected by the change. Also new is the ability to type in the name of a function and hit a hot key for code completion, and to click on a variable that jumps to a file where it is defined, he said. A future release will offer additional refactorings, as well as the ability to find and fix errors in source code.

Such features are made possible by an underlying change to CDT. "We integrate the compiler [Intel or GNU Compiler Collection], take in the source code and parse it to understand the syntax," said Marineau. "The tool has a better understanding of what the developer is doing." Because CDT lets developers specify which compiler they are using when they create projects, they no longer need to manage the build process manually. Marineau said that when developers are ready to do the build, "they say, 'Here's my project. Here's my source file. Go off and build it for me.'"

"We deeply regret this incident"

Kevin Kessinger, EVP, Citigroup June 2005



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Validian SDK Addresses Security

BY JENNIFER DEJONG

Application-level security developer Validian last month released a software development kit designed to work with its development platform.

Used in tandem with Validian ASI, SDK 1.0 lets developers who lack security expertise write in C++ messaging applications that are inherently secure from an authorization and encryption standpoint, said Mark LeGuerrier, Validian's vice president of technology.

The Ottawa-based company also announced an update to Validian ASI. The new version, 1.2, adds better support for managing cryptographic keys, used to unlock documents that have been secured, and for multiple tokens, which are used for authentication.

The two offerings, aimed primarily at ISVs, enable developers to incorporate secure messaging at the application level, he explained. Such capabilities are typically added after the fact.

The company plans to deliver Java editions of its offerings next year, said LeGuerrier.

VMware Will Give Partners Virtual Access

By opening certain source code, company hopes to drive virtualization standard

BY DAVID RUBINSTEIN

Virtualization software company VMware has announced plans to support Linux and Solaris x86 operating systems, and says it hopes to create a standard for virtualization software by releasing some of its source code to strategic partners.

With the new operating system support, enterprises now will be able to manage Linux, NetWare, Solaris x86 and Windows virtual machines from the same host platform.

"With more options available, customers can transition a larger portion of their data center workloads to a virtual infrastructure and thereby benefit from the proven ROI of a virtual operating environment," Jeffrey Engelmann, executive vice president of marketing at VMware, said in a statement.

VMware will share source code and interfaces for its ESX Server software with chip maker Advanced Micro Devices, network infrastructure provider Cisco Systems, and also with HP, IBM and Red Hat, among others. Under the terms of the code release, those partners will be able to change the code for use in their products but will not be able to give away VMware's engine.

Also, VMware is hoping these partners, under a new program called VMware Community Source, will help establish the product's future direction.

Some analysts see the move as a preemptive strike against Microsoft, which has indicated that it could include similar virtualization software in Windows Vista. Microsoft purchased Connectix, which competed with VMware in the desktop part of the virtualization market; its product is now called Microsoft Virtual PC.

SOLARIS GOES VIRTUAL

Sun Microsystems announced at the LinuxWorld Conference in San Francisco last week that it will include VMware's virtualization capabilities on its Sun Fire servers, and that Solaris 10, its Unix operating system, will be included in future

VMware products as a target operating system.

"Virtualization opens the network and liberates the customer to implement server con-

solidation, respond faster with virtual infrastructure and dramatically improve and lower the cost of disaster recovery," said Sun vice president of part-

ner marketing Stephen Borcich in a statement.

Sun will resell VMware ESX and GSX server software and VMware Workstation with

its servers, allowing organizations to run multiple operating systems on the same hardware, thereby increasing server utilization. ■

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Population demographics analysis application



Web-based property management system



Using GIS components within a commercial IDE

News Briefs

NEW PRODUCTS

An Excel-compatible server component is available from SpreadsheetGear. The company has released the first beta of **SpreadsheetGear for .NET**, which runs on both 32-bit and 64-bit .NET, and plugs into VS.NET 2003 and Visual Studio 2005. The software costs US\$499 per developer, and does not have runtime royalties . . . TulaSoft is offering **SQL Examiner**, a utility that can compare and synchronize different database versions. The US\$199 software, which runs on Windows, will highlight the differences between live databases, and provides tools for updating all or part of the databases by generating SQL scripts . . . BEA Systems has shipped **AquaLogic Service Bus 2.0**, which previously was code-named QuickSilver. The new enterprise service bus is designed to work with BEA's application and integration servers . . . Absoft is offering a **High Performance SDK for Opteron Linux Clusters**, which incorporates



PathScale's 64-bit Fortran and C++ compilers, as well as Absoft's debuggers, math libraries and other development tools. Pricing is based on the size of the cluster and the number of concurrent users . . . NT Objectives has launched **Application Security Assurance Program**, a consulting service to help developers discover and remediate Web application vulnerabilities, as well as implement processes, procedures and best practices to permanently address Web site security risk. ASAP combines the company's security assessment products and its training and consulting services . . . Corda Technologies has launched **CenterView**, a system for building executive dashboards for corporate managers. The software can



visually highlight trends, variations and exceptions in business data; the charts and graphs can be drilled down to provide more detailed information or for navigation. It also can serve as a graphics inter-

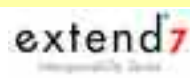
face for business intelligence platforms, databases and Excel spreadsheets. CenterView works with relational databases, flat files, spreadsheets and portals. Reports can be viewed on desktop clients, browsers or smart phones . . . JasperSoft is now offering **JasperReports DBA Dashboard for MySQL**, an open-source tool that lets developers and administrators monitor database performance, plus identify problems in MySQL servers.

UPGRADES

Extentech has released version 4.1 of **ExtenXLS**, a Java API that creates Excel-compatible spreadsheet reports from any data source. ExtenXLS lets users execute queries,



populating the resulting values into the appropriate cells in the spreadsheet file. The new release offers performance improvements, bug fixes and support for dozens of new financial formulas. The component costs US\$995 per server processor; this includes one test or development seat . . . AdventNet has updated its **ManageEngine Applications Manager**, a tool that manages Web servers and applications. Version 6.0 supports AIX and WebSphere 6, and also adds script monitoring capabilities for Linux and Windows. Pricing ranges from a free version that can monitor five applications up to US\$9,995 for an unlimited license . . . Version 6.1 of Cape Clear Software's enterprise service bus software, called **Cape Clear**, adds support for Internet messages using the WS-ReliableMessaging specification. It also extends its JMS capabilities to work with implementations from BEA, IBM, JBoss, Oracle, Sonic and TIBCO. The new middleware also includes an optional integrated version of the JBoss JMS and has improvements to its BPEL support . . . Acucorp has updated its COBOL server software. **Extend 7** enhances interoperability with Java, making it possible to call COBOL



from Java, and to call Java from COBOL. It also lets C++ programs call COBOL, expands support for distributed IBM CICS applications and improves compatibility with other COBOL dialects . . . Lokas Software has released **AWInstall 4.0**, an upgrade of its Windows installer suite. The new release, priced at US\$99 per seat, expands the tool's .NET capabilities to check the version of the .NET Framework, and can register assemblies into the Global Assembly Cache . . . Database developer 4D has shipped **4th Dimen-**

► continued on page 26

JetBrains Adds Web Savvy to IntelliJ

IDE supports JavaScript, JSP 2.0, mobile development

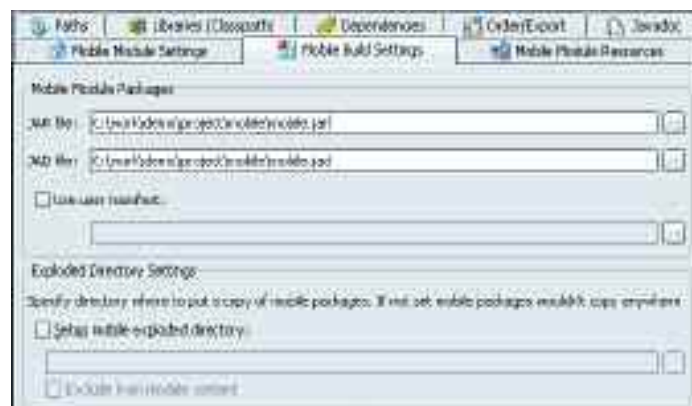
BY JENNIFER DEJONG

When it comes to Web authoring tools, JavaServer Pages and mobile development, IntelliJ is getting smarter.

The Prague, Czech Republic-based JetBrains last month released 5.0 of IntelliJ IDEA. Chief among the changes in this release is the ability to use Cascading Style Sheets, JavaScript and HTML from within the IDE, said company president Eugene Belyaev. "We have created an authoring environment where developers can use HTML, CSS, JavaScript and server-side Java, all within the same file."

Used in IntelliJ, all three Web technologies support error detection, code completion, refactoring (which improves code design) and other capabilities that IntelliJ developers have become accustomed to, he said. Such improvements are a boon for developers because dynamic languages, such as CSS and JavaScript, are notoriously difficult to check.

"You never know what environment they will run in," said Belyaev. Languages like Java are



New to IntelliJ 5.0 is support for mobile development. This shows the settings dialog for configuring Java ME applications for building.

compiled, which means the compiler can check for errors, he explained.

IntelliJ 5.0, which costs US\$499 per license, supports JavaServer Pages 2.0. The jump to JSP 2.0 is important, because, unlike JSP 1.1, 2.0 is purely XML-based, which means it can be analyzed by tools and servers, noted Belyaev. Support for Java ME, the micro edition of the Java 2 development platform, lets developers set up the necessary mobile Java development kit and test and debug their code, running it against various

phone emulators, he said.

Improved code inspection capabilities let developers detect unused classes, methods and fields, for example, or find code that might lead to problems such as an if statement that is never executed.

Also new is the ability to import projects created in Eclipse and Borland's JBuilder, and support for the Perforce SCM and the open-source Subversion version-control systems, in addition to Borland's StarTeam, Microsoft's SourceSafe and the open-source CVS. ■

Eclipse Green-Lights EJB 3.0 Mapping

◀ continued from page 1

to relational databases. The specification, which has not yet been finalized by the JCP, will eliminate the need to write lengthy deployment descriptors, which are application-server specific. By using metadata, EJB 3.0 will enable developers to deploy an Enterprise JavaBean to any application server with a couple of lines of code, said MacNeil. "It's a huge advance in simplifying development."

In the Java community, there has been a rift as to how to do data persistence. BEA Systems, IBM and Oracle have been opposed to extending the object-based Java Data Objects specification, saying it was difficult for Java programmers to implement, while Sun Microsystems has supported it, citing its loyal following. Of the four, only Sun voted in favor of Java

Data Objects 2.0 (JSR 243), in April 2004, according to the Java Community Process Web site.

Sun has since backed EJB 3.0, a container-based approach to data persistence, co-leading with Oracle the JSR 220. "The EJB/JDO war is behind us," said MacNeil. But according to the EJB/JDO Persistence FAQ, published on the Sun Developer Network Web site, JDO is not going away. "JDO will continue to be supported by a variety of vendors for the indefinite future.... However, we expect that over time JDO developers and vendors will shift their focus to the new persistence API."

The Eclipse project will focus solely on creating EJB 3.0 tools, not on the application server they are deployed on, he said. The project will get under way with an essen-

tially clean slate. While all three players offer object-relational mapping tools for Java, none has donated code to the project. "We could have just said, 'Here's TopLink,'" said MacNeil, referring to Oracle's offering. "But we wanted to collaborate, to build something from the ground up." JBoss and SolarMetrics provide the Hibernate Mapping Editor and Kodo Development Workbench, respectively. Both companies are members of the JSR 220 EJB 3.0 expert group, which Oracle co-leads with Sun.

MacNeil said Oracle is pursuing other companies to join the Eclipse EJB project, but he did not identify them. He also noted that Oracle recently proposed two additional Eclipse projects: JavaServer Faces Tooling Project and The BPEL Designer Editor. ■

A woman with red hair, wearing a dark business shirt, a grey skirt, and blue boxing gloves, stands in the center of a glass-walled office cubicle. She is looking directly at the camera with a determined expression. The cubicle contains a desk with a computer monitor and a lamp, and an office chair. A framed picture hangs on the wall. The IBM logo is in the top right corner.

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Combining Methodologies, Tools for Agile Projects

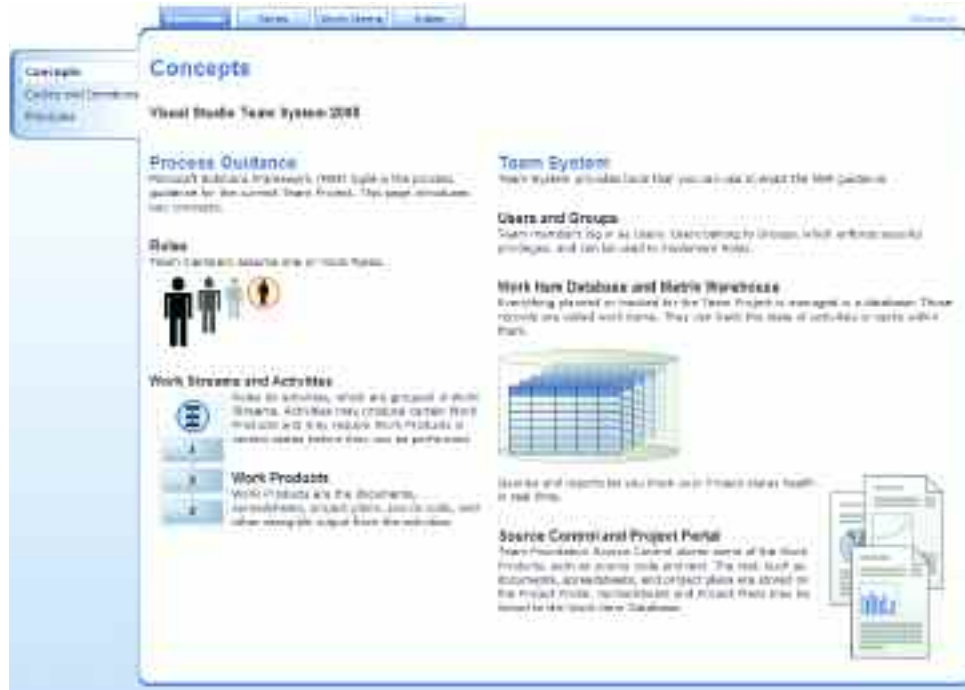
◀ continued from page 1

With good support, an IDE can speed up the writing of code, said Jeff Nielsen, chief scientist at Herndon, Va.-based Digital Focus, which provides agile training and consulting services. "But tools can drive you in the way that's counter to the agile value system," he said. And if tools replace teamwork and communication, agile people won't like that, added Rally's Leavitt.

VISUAL STUDIO GETS AGILE?

Even if agilists like Microsoft's new agile offering, they aren't likely to see it as agile. The company plans to offer with Team System, the life-cycle edition of Visual Studio expected in November, a plug-in template that provides what Microsoft calls "process guidance" for teams that choose to make use of it. Microsoft Solutions Framework for Agile Software Development tells the IDE how to behave, said Microsoft's Bindia Hallauer, a senior product manager for Team System.

"I develop my code and try to check it in," she said. "But the tool will tell me, you have to write unit tests first." And it takes a step beyond that, she said, offering how-to advice on creating unit tests, for example.



Microsoft's MSF for Agile puts process in Visual Studio Team System.

Source: Microsoft

VersionOne's Holler characterized MSF for Agile as "a lightweight overlay on Microsoft's comprehensive infrastructure," and said it may be useful for a team taking its first steps away from traditional waterfall development, toward agile. "But will it make teams

truly agile? You can try, but you are really just settling," he said. While it's great to see Microsoft embracing agile concepts, Rally's Leavitt said, MSF for Agile is really about "process enforcement," not implementing an agile methodology. Microsoft does not disagree. In its

view, agile isn't an all-or-nothing approach. "In the real world, most agile processes supplement existing processes," said Hallauer. "No one process fits all scenarios." What's more, Microsoft is not advocating agile software development methods over other approaches. The company plans a process template guide for Team System, for teams implementing Capability Maturity Model Integration, a process improvement approach devised by the Software Engineering Institute at Carnegie Mellon University (see sidebar). In addition, Team System is designed to let enterprise development teams—or third-party vendors—create their own process guidance templates, she said.

DON'T SAY THE M WORD

"Guidance" is the operative word for Microsoft, said Forrester's Barnett. "They are reluctant to use the M word [for methodology]." MSF for Agile is not an agile methodology, she said. It is Microsoft's answer to the Rational Unified Process, IBM's software develop-

▶ continued on page 17

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CMMI AND AGILE? SAY IT ISN'T SO

Agile is all about being adaptive. CMMI aims to make processes more predictive.

So, what on earth do they have in common?

"More than they want to admit," said Richard Leavitt, vice president of product marketing for Rally Software, which makes software for managing agile projects. Both seek to provide a disciplined approach to developing software, he said. "But people can argue that they are diametrically opposed."

Capability Maturity Model Integration is a process improvement approach developed by the Software Engineering Institute at Pittsburgh-based Carnegie Mellon University. Its goal is to replace the informal, haphazard approach to developing software, which often delivers too little, too late, with a formal, more predictive model.

CMMI is a framework that aims for



CMMI and agile have more in common than they care to admit, says Rally's Leavitt.

controlled, repeatable processes, noted Leavitt. Agile is an umbrella term that encompasses half a dozen software development methodologies, including Adaptive, Crystal, Extreme Programming and SCRUM. The differences among the individual agile methodologies are subtle, and all propose iterative development.

By contrast, CMMI aims for auditable processes. There's a compliance aspect to it, said Microsoft's Bindia Hallauer, a

senior product manager for Team System, the forthcoming life-cycle edition of Visual Studio, noting that many government agencies and defense contractors mandate CMMI conformance. Microsoft plans to include MSF for CMMI—which extends its MSF for Agile offering for teams that opt for CMMI—in Team System, she said.

—Jennifer deJong

◀ continued from page 16

ment methodology that is implemented in, and closely tied to, the company's software development platform. IBM sees RUP as an agile methodology, said Per Kroll, a development methods strategist at IBM Rational. But many, including Barnett, do not.

She also disagreed with those in the agile camp who claim that RUP and MSF for Agile force developers to work a certain way. "I don't think they force you to conform at all," she said.

In any case, software development is a creative process, said Kroll. "No tool can help you be more creative." ■

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Apache OKs IBM Speech Initiative

BY JENNIFER DEJONG

IBM's open-source Reusable Dialogue Component initiative has gained status as a full-fledged project at the Apache Software Foundation, the company announced at the

SpeechTEK conference last month in New York.

"It has moved out of the sandbox," said Brian Garr, IBM program director for conversation access solutions, referring to Apache's incuba-

tor program, through which new projects enter.

IBM also announced that three of its partners—Audium, Fluency and Openstream—have voiced support for the project by donating RDCs, precod-

ed speech snippets that eliminate the need for developers to acquire voice user interface skills, said Garr. They let developers speech-enable applications to "converse" with end users. Each RDC provides the

voice user interface for a basic function, such as getting a name, address, city, state or country, as well as credit card numbers, dates and currency, he said. But he did not specify what functions each partner's offering addresses.

IBM launched the RDC initiative last September. Developed by IBM Research, RDCs are JavaServer Page tags that generate VoiceXML at runtime. VoiceXML is the W3C standard for specifying voice dialogues between humans and computers. IBM WebSphere Voice Server is based on VoiceXML, while Microsoft's Speech Server relies on the competing Speech Application Language Tags (SALT) standard. ■

Kode 1.0: IDE for Many Languages

BY DAVID RUBINSTEIN

A new multiplatform, multilanguage development environment has been released by theKompany.com, which hopes a very low price point and ease of use will be enough to differentiate it from the myriad other IDEs already on the market.



Kode 1.0 will sell for US\$39.95 per seat, according to Shawn Gordon, president of the Rancho San Margarita, Calif.-based company. "We've got support for a huge list of languages," Gordon said, citing C/C++, Java, Perl, Python, Ruby, Ch, TeX, SQL and many variations, as well as Web-related languages like HTML, DTML, PHP, CFML and JSP, plus XML.

Gordon said few developers creating Web apps connected to back-end systems touch only one language anymore. Providing support for all these languages in one IDE is "all about a comfort level," he said.

Kode 1.0 allows what Gordon called arbitrary configuration of builds or Makefiles, so that users can specify an interpreter for scripts or launch a compiler when needed.

The next release, which Gordon said is coming soon, will integrate with the CVS and Subversion version control systems, and include debugging and database wizards, which will automatically generate intermediate XML files and convert them to the appropriate language code. ■

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LinuxWorld Goes Corporate, Global

◀ continued from page 1

tools for free, provided they are utilized in open-source projects, while their use in closed-source projects incurs a fee.

Many companies used LinuxWorld as an opportunity to open up their own projects to the community at large. **IBM** offered some of its newest code to open-source developers, including a tool for rapidly searching databases by "key facts," and **VMware** said it would make its source code available to its business partners, though not to the public at large. Such caveats were exemplary of the numerous, and often-times disingenuous, moves to open source.

With software patents weighing heavily on the minds of many in the community, **Open Source Development Labs** announced the creation of the "patent commons" project, which it hopes will become a repository for patents made available to open-source developers.

One company that has



One of this year's trends was the appearance of a number of Asian Linux projects and associations on the show floor.

released numerous patents to open source is **IBM**, which announced its Grid and Grow platform. The initiative is designed for midsized and large businesses in need of expandable grid computing solutions. IBM also announced the advancement of its Workplace software, aimed at midsized businesses in need of Linux-based communication and collaboration software.

Redwood Shores, Calif.-

based **Gupta Technologies** led the cross-platform development charge with its announcement of Team Developer 2005.1. This new revision offers enhanced support for MySQL, and new OOP-to-XML interfaces. This new edition also includes an updated version of the company's popular Report Builder software.

MySQL AB was on hand to announce its extended partnership with Novell and to

boast about its expanded adoption in database-driven Web applications. **Novell**, in turn, announced that it would begin offering openSUSE, a free and open-source version of its popular Linux distribution.

Funambol, a Silicon Valley start-up, hawked its support options for the Sync4j software project. The company has contributed a great deal of code to this open-source mobile applications server, and also announced it received US\$5 million in venture capital, led by Walden International and H.I.G. Ventures.

Business Objects announced the release of its popular BI platform, BusinessObjects XI, for Linux, with new support for Novell's SUSE Linux and Red Hat's Enterprise Linux. **GoldenGate Software** showed off its MySQL transactional data management products, while **BakBone Software** announced the first video surveillance system for Linux.

Monrovia, Calif.-based **Parasoft** announced the release of C++Test 6.5, an automated

testing tool that also can analyze coding standards and offer help to muddled programmers. The company also showed off Jtest 7.0.

Norwegian developer **Trolltech** announced the release of Qt 4, an updated release of its cross-platform C++ development tool. In addition, the company showed off Qtopia, a mobile application development platform based on Qt.

Another noticeable trend on the show floor was the appearance of numerous Asian Linux projects and associations. The **Beijing Software Industry Productivity Base** had representatives at the event to voice their support for the operating system.

Korea-based **Sun Wah Linux** announced its new Debian-based Linux distribution, the first of its kind to be regionalized for the Chinese market.

Another Asian developer, Singapore-based **Resolvo Systems**, offered new products to help companies migrate their desktops and servers onto Linux. The software, called the MoveOver Enterprise edition, brings everything from a Windows desktop into Linux. ■

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SAAS: Sales, Support Are the Same

◀ continued from page 5

tions get asked most often. "If API activity calls go through the roof, we ramp up API training," said St. Ledger. "Support and education are attached at the hip."

REACHING OUT TO RESELLERS

SAAS players who have already reached out to resellers have done so largely to tap into industry-specific domains that are otherwise difficult to penetrate. ScribeStudio has teamed up

with Ringwood, N.J.-based SANS, which serves the language learning market, reselling hardware and software to high schools and colleges. "We want them to be the front line of support for the schools," said

Cervieri. "We train them, delivering support when they call our office." To reach small businesses, the company is in the initial stages of going after broad-based market resellers, such as Office Depot and Costco, he


said. But that raises questions of how best to convey to potential buyers what ScribeStudio sells. "Do we create a package that includes a CD-ROM with nothing but a link to our Web site?" asked Cervieri. Otherwise, there is no physical product associated with the sale, he said.

Salesforce.com distributes its offering directly, and just recently has begun to co-sell with partners. St. Ledger did not say what percentage of the monthly revenue co-sellers keep. But she emphasized that Salesforce.com has no plans to offload the support function to those that resell its service. Some SAAS providers haven't been partner-friendly, said Brent Arslaner, vice president of product strategy for Santa Clara-based Jamcracker, which offers software that automates billing and other management functions for SAAS providers. "But they have to make it easier for partners to get into the game."

The SAAS model can't grow without a vibrant channel, added Chris Clabaugh, vice president of business development for Brisbane, Calif.-based CollabNet, which delivers its development framework as an Internet service. To date, the company has sold direct, but it expects to announce channel partners and programs this fall.

To bring partners on board, SAAS providers must offer them incentives to sell, as well as opportunities to make money delivering service, said Clabaugh. "Pricing should be 30 percent off list. That is the norm for the channel." In addition to a percentage of monthly per user revenue, partners also should receive a bigger piece of repeat business. In return, partners should assume responsibility for support. Even though basic support has no revenue associated with it, there are opportunities for partners to make money delivering enhanced support offerings, he said.

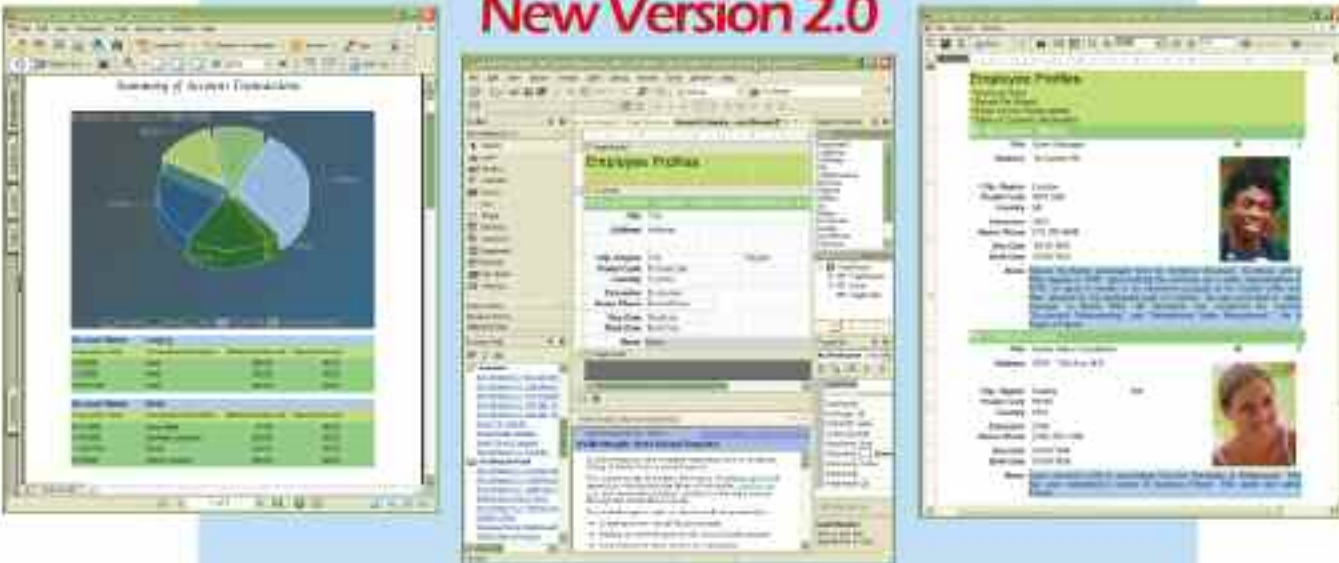
How do channel partners feel about that? At least one is game. The model for selling software has changed dramatically, and channel partners have to adapt to those changes, said Eric Scheible, president of Scheible Rassieur, a reseller and professional services firm in Los Gatos, Calif. There is a great deal of opportunity in selling software as a service, he said. "The technology is there. SAAS makes sense now." ■



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Konfabulator Kick-Starts Yahoo Developer Network

Desktop tool program is now free, will support Yahoo XML APIs

BY ALEX HANDY

Arlo Rose, Perry Clarke and Ed Voas are rather excited about the fact that the Sunnyvale, Calif., office of Yahoo.com has free coffee. That's because these three gentlemen, the makers of the Konfabulator desktop enhancer for Mac OS X and Windows, are now full-time Yahoo employees.

Soon after Yahoo acquired Konfabulator at the end of July, it was announced that the Konfabulator team would kick-start the Yahoo Developer Network. The new development network will take advantage of Yahoo's newly created XML APIs.

KONFABULATOR ORIGINS

Konfabulator began as a way of integrating commonly used applications into the Mac OS, and later, into Windows. Rather than loading a calculator or calendar application whenever it was needed, Konfabulator kept small and colorful versions of these applications hanging along the side of a screen session, ready to be used at the push of a button. These individual tools are called widgets.

Chief among Konfabulator widgets are Internet-enabled items such as weather reports, television schedules and stock tickers. Since widgets such as these require a source for the information they convey, Yahoo's acquisition of Konfabulator's parent company, Pixoria, gives Yahoo an extensible platform for disseminating its data, and for creating code that demonstrates how to access that data. The company has removed the registration fee formerly associated with Konfabulator, making it a free application for Windows and Mac users. The latter platform, however, has been usurped by Apple with the release of Dashboard in Mac OS 10.4, a copy-cat program that mimics the functionality of Konfabulator.

With the release of its XML APIs, Yahoo is moving into head-to-head competition with Google, which also released application interfaces for its information tools, such as Google Maps.

"The best thing is that we now have the ability to have a say in the kinds of data feeds we get [for use in Konfabulator]," said Rose, now Yahoo's Director

of Widget Technology.


"With the Yahoo finance property we [Rose and his team] have the ability to do portfolios and have it all be cen-

tralized, so no matter what computer you're on, you have the ability to get that same information through that widget if you happen to have a

Yahoo user ID," said Rose.

As one of the founding members of the new Yahoo Developer Network, Rose and his team are the first programmers to get

their hands on Yahoo's new APIs. His main task is "taking those XML APIs and working with the people that are working on them to get them usable, and then doing cool things with them in Konfabulator. We're working with folks both internally and externally to come up with neat things to do," said Rose. ■



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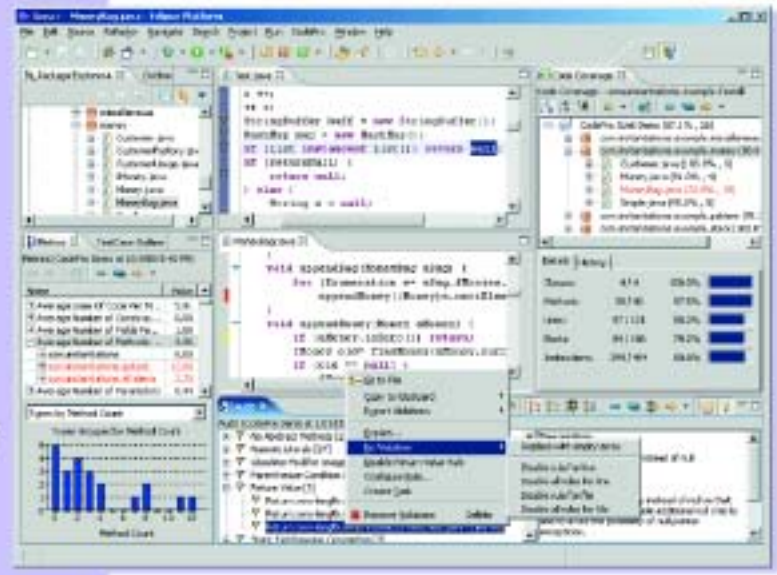
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News Briefs

MORE UPGRADES

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sion 2003.7. This update to the cross-platform database engine supports Mac OS X 10.4 and includes several bug fixes . . . SPI Dynamics has integrated its **QAInspect** security testing software with Mercury



Interactive's Business Process Testing. The integration lets QA

professionals add security testing to an existing business process test plan using prewritten test components . . . ILOG has released **Gantt for .NET 3.0**, a project management charting component for Windows. The new release includes a "project management option" that lets developers customize the appearance of user interfaces to fit corporate styles or palettes. It also can generate tree tables, and uses image transparency to indicate how much of a resource is used for an activity . . . BEA Systems is now offering a version of its **JRockit 5.0** Java Virtual Machine for 64-bit Linux running on Xeon or Opteron processors . . . Aladdin Knowledge Systems has made its **HASP HL** software user authentication system compatible with Apple Computer's forthcoming Intel-based Macintosh systems. HASP HL is based on a USB-based hardware key . . . Hit Software has updated **Ritmo**, its specialized .NET data provider for accessing DB2 databases running on IBM's iSeries or AS/400 minicomputers. Version 3.0 includes new design tools to let developers use Visual Studio to navigate the minicomputer databases and database objects. The new release also integrates with Microsoft's SQL Server Reporting Services, which lets that application connect to the iSeries DB2 database . . . Version 3.0 of **Exadel Studio Pro**, a Java IDE from Exadel, adds new support for JavaServer Faces, Struts, Hibernate and Spring. The Eclipse 3.1-based IDE also adds a visual JavaServer Pages page designer, enhanced database mapping tools for Hibernate, and a verification framework for XML, JSP and Java code, and JSF and Struts configuration files . . . Eiwa System Management is offering version 2.3 of **JUDE Pro-**



fessional, a modeling tool. JUDE stands for "Java and UML Developer's Environment." The new release

integrates with Mind Map, a free-form tool that helps developers brainstorm and collaboratively visualize application or design objectives. The company offers a free community version and an enhanced version with additional diagrams for US\$280 . . . SourceLabs has created **SASH Stack for Java**, an integrated stack of open-source tools that offer Java-friendly building blocks for applications. SASH includes Java-centric frameworks for Web applications development, including Apache Struts and Axis, and Java Spring and Hibernate.

PEOPLE

**NUTI**

NCR has hired **Bill Nuti** as its new president and CEO. Nuti formerly was president and CEO of Symbol Technologies, which sells embedded operating systems and tools for mobile devices. **Sal Iannuzzi**, Symbol's senior VP and CFO, has been named interim president and CEO while a search for a replacement is conducted. NCR's previous chief executive, **Mark**

Hurd, succeeded **Carly Fiorina** at the helm of Hewlett-Packard . . . **Kevin Turner** is the new COO of Microsoft; he had served as president and CEO of Sam's Club, which is Wal-Mart's warehouse club division. Microsoft's previous COO, **Rick Belluzzo**, left in a 2002 corporate reorganization, and later became chairman and CEO of storage company Quantum . . . Telelogic AB, the Swedish software tools maker, has promoted **Scott Raskin** to COO. Raskin had served as president of Telelogic's American division since 2001; he will be based in Irvine, Calif. . . . Novell

has hired **Susan Heystee** as president of its North American sales and field operations; she had been VP and general manager of sales in the Midwestern U.S. Heystee replaces **Ron Hovsepian**, who was earlier promoted to EVP for worldwide field operations . . . **Sandeep Gupta** is the new CTO of The SCO Group; he had been with the original Santa Cruz Operation since 1996, and most recently served as VP of engineering. The previous CTO, **Scott Lemon**, left the company in early 2004. ■

**HEYSTEE**

Don't Throw Out the Source Code When Upgrading the Hardware

Workstation recycling can pose a big security risk

BY ALEX HANDY

Thanks to an economy that's gaining a head of steam, most software development managers now will be able to rationalize those system upgrades that they've been putting off for the past few years. As a result, productivity will increase and build times will decrease. But don't toss those old computers in the trash just yet! Are there large chunks of source code on those hard drives? Do the members of your development team use expensive per-seat software? Are your development road maps sitting in Word documents on those drives?

When your company retires computers from the front lines, there is enormous potential for security breaches. In the 1970s the phone company learned that throwing documents in the trash meant phreaks would try to dig them out at night, flashlight in hand. These days, companies are quickly discovering that hackers and the competition can find all manner of usable data on old hard drives, from valuable snippets of source code, to network passwords, to licensing information for those expensive development tools. Before you hand those old machines over to IT, it might be a good idea to sit down and figure out just what you're giving away.

DECIDE BEFORE DONATING

James Burgett is the director of the Alameda County, Calif., Computer Resource Center, a nonprofit electronics recycler near San Francisco that specializes in refurbishing old equipment and donating it to nonprofits, third-world nations and underprivileged individuals. For Burgett and his staff, the decisions made by donating companies can have far-reaching consequences.

"If you hand it off to an organization that will refurbish it for reuse, they will take care of the data," said Burgett, whose staff installs Linux on donated PCs after formatting the drives. "If you're looking for the best envi-

ronmental solution, you need someone who will handle the data security and reuse the machine. From a security standpoint, the best thing they can do is remove and physically destroy the hard drives themselves. Your secondary option is to contract with a reputable organization to handle data security."

Burgett continued, "Data security is a bit of a bugaboo. People are destroying hard drives that never need security. Unless your corporate secrets are on the drive, I submit a simple formatting will do well. A good rule of thumb is if the information that's on the drive

experiencing a shortage of usable hard drives in his donation stream due to widespread data security concerns. Without hard drives, some of the PCs he receives cannot be refurbished and donated, and thus enter the recycling stream rather than the reuse stream.

CHOOSE RECYCLER WISELY

That sentiment is echoed by Bill Vass, CIO of Sun Microsystems. "You need to make sure you're choosing your recycler carefully," said Vass, who is a former employee of the Department of Defense, "because it is entirely possible that they could send stuff over [to China]."

Vass said that the biggest danger when recycling hard drives is boredom on the part of the recycler. If someone on the other end is looking for something to do, said Vass, they may just try to boot a random machine and root through the data for fun.

The same goes for other types of media: A random CD found in a dumpster could find its way into the drive of a hacker who's gone trashing. Vass said that destroying solid media is the best bet for security concerned organizations. "There are CD shredders. They can even shred flash cards, though they would have a little trouble with a USB drive," said Vass.

Vass went on to say that Sun typically does not have to worry about desktop data security when it retires machinery, because it uses its own Sun Ray thin-client terminals. "I encourage people to use a thin client so they don't have to mess with any of this," said Vass. "If someone ever steals a thin client, there's no data on it."

While thin clients certainly solve the issues related to data security on the desktop, most organizations aren't using them. But that's just fine with Burgett. His nonprofit donated over 5,000 Linux-based PCs to people in need last year, and at least half of them came from corporate donors. ■



Development shops recycling hardware need to take precautions to protect source code.

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Metrowerks Brand Defeated by CodeWarrior

Scaleback of non-Freescale targets nears completion

BY EDWARD J. CORREIA

Metrowerks this month will cease to exist as a legal entity, and its former operations will be organized under a yet-to-be named division, its parent company Freescale Semiconductor told SD Times in July.

The company had gradually been scaling back operations of Metrowerks, the development tools company it acquired while Freescale was still the semiconductor division of Motorola. Now, with the exception of its Linux tools, Metrowerks has divested or halted advancement of all tools targeting non-Freescale silicon. This has extended to non-embedded platforms as well, with Metrowerks announcing the discontinuation of its 20-year-old CodeWarrior for Macintosh development suite.

"We think that investing in Freescale will help the overall business grow," said Tim Tumilty, Freescale's director of marketing and operations.

"Instead of focusing on being a major external tools company, we want to be the leading embedded semiconductor company." Before it was acquired, Metrowerks was known for its agility, often releasing tools for new platforms faster than competitors.

But John Smolucha, former vice president of marketing for Metrowerks, doesn't believe Freescale is making the right moves when it comes to the tools division.

"I think that Freescale doesn't necessarily understand the value of software and the whole development process as an enabler to the sale of silicon," Smolucha said. "There was a reason [Motorola] acquired that company. It was a strategic acquisition. And I think that down the road people will look at that and think that



Freescale wants to focus on becoming 'the leading embedded semiconductor company,' according to Tumilty.

folding it back wasn't the right thing to do." Smolucha is now vice president of worldwide operations at Encirq, an embedded data management solutions provider.

One of Freescale's most recent moves came last fall, when it sold its SymbianOS tools to Nokia for US\$30

million; many of its other divestitures and product discontinuations went largely unnoticed. "Obviously Nokia saw the strategic importance of owning that CodeWarrior tool-chain for SymbianOS, and Freescale didn't," Smolucha said, "even through it would have enabled their microprocessor architectures to have an advantage."

But the change in strategy, Tumilty said, came as a direct result of a shifting competitive landscape. "When I joined the company about 15 months ago, many people on my team wanted to beat Wind River, MontaVista or Green Hills. Today our competitors are recognized as Intel, TI, Microchip and the other semiconductor companies."

So the company gradually disengaged from most of those competitors, Tumilty explained, and began talks with what it saw as its new potential partners, companies like Green Hills, MontaVista and Wind River. "Today we license our technologies to many third parties in the ecosystem, and we intend to continue that strategy to unbundle our technologies and offer them to third-party partners. That's a change in strategy for us."

Freescale also will continue to supply CodeWarrior to a few chip makers, one of which is ARM. "Freescale is an ARM licensee, so we continue to do business. But the objective for our alignment strategy is to focus on leveraging Freescale technologies."

The final step is to dissolve Metrowerks as a legal entity, which Tumilty said would be sometime later this month. "We don't want to fund three brands and confuse the market with three different names," he explained. Tumilty would not rule out the possibility of layoffs. "I never say never. But I don't believe there are any plans for major changes." ■

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They've Got Diplomas, But Do They Have

Colleges are changing their development curricula to impart but don't expect new graduates to be immediately ready



BY ESTHER SCHINDLER

For six semesters, while she was a grad student in the United States, Myrosia Dzikovska, a researcher at the Human Communication Research Centre in Edinburgh, Scotland, worked as a teaching assistant. She assisted undergraduate students and first-year doctoral candidates, and graded papers. "I seemed to be engaged in a constant battle with most of them to obtain properly documented and readable code," she said. Few would follow even the most basic guidelines. Underlying their excuses, Dzikovska said, "Many didn't have the habit of proper code development in the first place."

You've probably hired one of those students.

In nearly every profession, it's common to complain about the poor quality of the latest crop of college graduates. You don't have to buy a second beer for a development manager before you hear horror stories of new hires who know nothing of software testing or writing secure code. Yet, software development—and the universities we depend on to supply its practitioners—have unique demands. Technology and tools evolve faster than any reasonable curriculum can keep up with. Then, the first day on the job, new hires are expected to demonstrate both theoretical breadth and domain-specific depth.

IT managers may think that their new hires are ill-prepared for the real world, but many higher education professionals refuse to shoulder the blame. At its heart, the issue revolves around two questions: the expectation of a college grad's knowledge (and thus your company's need to provide additional training), and the old art-versus-science debate about programming that you probably had in your *own* dorm room when you were in school.

At many universities, the emphasis is



'Economics majors don't pick mutual fund portfolios right away. Chemistry majors don't formulate detergents without more work. Why do employers expect more from an undergraduate computer science degree?'

—David Hemmendinger, professor of computer science at Union College in Schenectady, N.Y.

on broad understanding rather than job skills. "A four-year university program cannot produce graduates who will require no additional training, nor should we try," explained Karen Ward, assistant professor of computer science at the University of Portland in Oregon. "We teach the basic skills and try to lay a broad foundation of concepts that will support the graduates in whatever direction they decide to go professionally. We actually get dinged in the accreditation process if we are teaching courses with no significant theoretical or foundational content, and rightly so."

Kyle Lutes, associate professor in the department of computer and information technology at Purdue University in West Lafayette, Ind., agreed. "A common belief among university faculty is that the purpose of a university degree is not to prepare the student to be productive in the workplace the first day after graduation. Training a worker to be effective in an organization is the responsibility of the hiring organization," Lutes said.

It's not a matter of unwillingness, according to these professors. In the classroom, experience can only be simulated, said Doug Waterman, IT instructor at Fox Valley Technical College in Appleton, Wis. "Experience fleshes out the framework we supply in our classes."

The sheer number of complex and expensive tools and techniques makes the challenge even more difficult. A student

takes two courses in his major per semester, over eight semesters. "That gives you 16 courses to teach a student everything, from how to write a simple program using variables and if statements, all the way to how to work on a team to develop a multitier enterprise application that supports thousands of concurrent users, has a Web user interface and a Windows form GUI, and uses a robust RDBMS back end," Lutes pointed out.

If you add to the curriculum, something else has to go. Explained Ward: "We're trying to jam more and more 'must have' topics into a very limited number of contact hours."

As a result, some professors said, it's unrealistic for businesses to expect college grads to be truly useful the first day on the job. "In what fields do brand-new college graduates do production work immediately upon graduation?" asked David Hemmendinger, professor of computer science at Union College in Schenectady, N.Y. "Economics majors don't pick mutual fund portfolios right away. Chemistry majors don't formulate detergents without more work. Why do employers expect more from an undergraduate computer science degree?"

INDUSTRY EXPERIENCE

Plus, the university system does not encourage faculty relevance. First,

► continued on page 34

Skills?

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THREE THINGS TO ASK THE KID IN FRONT OF YOU

It's nice to know about colleges improving their IT curriculums, but that may not help when you're interviewing a fresh-faced graduate who's earnestly hoping to get her first job. Here are some questions to help you learn about the quality of education that your would-be programmer received.

• **Tell me about your favorite professor's background.** If the position requires the newest skills, make sure that the student learned from someone who's written production code in the past five years.

• **What's the biggest project you've worked on, and how long did it last?** To many students, a "large" application would be considered trivial inside your company. According to Myrosia Dzikovska, a researcher at the Human Communication Research Centre in Edinburgh, Scotland, the students she worked with "had to write toy examples, and eventually individual or small group projects, but all of these were of limited size. They never really had an experience of taking a large previously developed software system and trying to modify it."

• **Do you prefer to work on front-end presentation systems or back-end server applications. Why?** Professional trainer Peter Petroski, who has taught programming courses for several years, including at Learning Tree International, finds that many students prefer front-end, presentation management code. "It is flashier, has a higher degree of visibility amongst people who matter [their peers, for example], and is trashable as soon as the next release of underlying technology becomes available.... Coding structured server-side programs is perceived as boring, even though the potential for more income is higher."

—Esther Schindler



Graduates Aren't Quite Ready for the

◀ continued from page 33

they're rewarded more for research and publication rather than industry experience; and many professors have only secondhand knowledge of life in

an IT shop. They may not be all that good at programming or testing themselves, Lutes suggested, and they've probably never developed a secure application for use in a net-

worked environment.

Many nontraditional and community colleges use this as an opportunity to stress their ability to impart real-world knowledge. Sydney Caddel-

Liles spent several years as a software engineer, and now teaches C# for DeVry University Online from her home in Porter, Ind. DeVry, and schools like it, are outcome-based edu-

cation. "Everything the students do can be traced back to a specific objective," she said.

According to Terri Keane, an IT instructor for Fox Valley Technical College, the Wisconsin Technical College system requires all its instructors to have a minimum of two years experience in the field. "We know how important testing is, and writing secure apps, and the importance of quality assurance," said Keane. "Students hear us say these things over and over."

CHANGES AFOOT

Some of the above may sound like whiny excuses, especially when you're the manager who's faced with an unready programmer. Traditional and nontraditional higher-education venues are making several changes to their curricula, however. They're simply struggling with the (sometimes insurmountable) problems in doing so.

Most four-year programs still are trying to turn out computer science graduates who are prepared to move into any part of the field, or to go on to a research-oriented graduate program. Perhaps, said Ward, that isn't realistic.

The computer science field, she said, is starting to fission into several separate specializations, much as engineering has. "We're seeing more schools offering 'tracks' of upper-division electives that allow students to gain some additional depth in one part of the field at the expense of others, and we're seeing more students turn to non-thesis masters degrees for additional specialization. We are also starting to see more specific four-year programs, such as software engineering degrees."

There's also more emphasis on real-world skills in the generalist education.

Ken McCullough, lead instructor in the information technology department at Madison Area Technical College in Wisconsin, said the college is adding to its testing, teamwork and communication skills. As one example, "Fourth semester students take a capstone class where they work as a software development team; they sign off on quality assurance at several steps in the pro-



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Real World

ject including design review, code review, and program/system test scripts," McCullough explained.

Ann Friauf is on the faculty at Carnegie Mellon West, where she teaches master's students in software engineering and everything is project-based. "Students work in teams to gather and analyze requirements, design the architecture and build a product. The teams submit their documents and code, and the grades are based on the quality of their work. Teams work closely with the faculty throughout the program."

Kishore Ramachandran, chair of the core computing division at Georgia Tech's College of Computing, said the university's introductory computer science course uses real-life experiences and interests to motivate students to attract them to the field. "Students study and create programs that manipulate sound, images and movies. They write code to create special effects for photos and movies, splice audio clips and create Web pages. In fact, the technology built for the course has proved to be so effective that other universities have adopted Tech's curriculum and improved course retention rates, especially among women."

WHAT YOUR COMPANY CAN DO Education is too important to leave to the educators. If your company wants better-equipped programmers, then it has to get involved in the process.

First, calibrate your expectations. Any new hire takes months to become truly productive on the job, even those with plenty of experience. That's even more true for kids straight out of college, who need to adjust to working life, learn your company's tools, and gain the day-to-day job skills.

One solution that benefits everyone is internships. SPI Dynamics hires many programmers from Georgia Tech after first having the students on-site as interns. The Imaging and Solutions Technology Center, part of the Xerox Innovation Group, hired three summer interns this year, reported Lissy Bland, senior hardware design engineer at Xerox. "As far as I can tell, all three were productive within the first month," she said.

Share your expertise. Send your own experts to lecture at the college. SPI Dynamics is actively working with Georgia Tech to improve the secure coding curriculum for develop-

ment and IT security students. Purdue has an industrial advisory board that consults on curriculum issues, according to Lutes. Faculty members also need support in the form of money, equipment and software. "If businesses aren't happy with what the colleges and universities are doing, they

need to get involved," he said.

That's especially true if you want specific skills, because you probably won't get them directly from the university system. Professor Daniel Jackson, of the Computer Science and Artificial Intelligence Lab at the Massachusetts Institute of Technology, said, "An under-

graduate degree is not primarily for vocational training; our job is to teach our students things that will benefit them in the long term. It's important that universities don't get caught up in transient technology trends, or waste time on details of complex tools that won't be around in a few years' time." ■

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EDITORIAL

Teach Your Children Well

Is there anything less useful than a newly minted college graduate? Whether in programming, electrical engineering or journalism, book learning rarely maps directly into the real world.

That's true not only because college grads lack the experience of working on real projects, being part of real teams, and betting their paychecks on real deadlines. It's true also because the technologies, paradigms and tools being taught at most universities lag somewhat behind the state of the art.

Professors and faculty can't revise their courses to take into account every new theory; that's not their job, of course. Schools focus on opening young minds, laying a groundwork of principles and essential skills. What comes out is (or should be) top-grade raw material for a long and rewarding career in software development—not an analyst, architect or coder ready to assume a leadership role on a behind-schedule integration project.

That leads to a conundrum for software development managers. Do you hire recent graduates, hoping that their youth, enthusiasm and low starting salaries will overcome their relative lack of initial productivity, and knowing that you (and your team) will need to invest considerable time and effort in training? Or do you recruit more seasoned developers, paying more money but gaining the benefit of their prior work experience?

In the real world, of course, most development organizations do both, mixing together a variety of skills and tenures to produce a team that can hit the ground running but also learn as it grows.

The learning process can be jump-started, of course, by finding the right talent and the right places from which to recruit students. Many colleges and universities are helping new grads by providing real-life projects as part of the degree program. They're also giving courses more relevance by requiring that faculty have recent industry experience, in addition to an academic background.

But even so, most employers need to be prepared to continue the educational process, not only with mentoring, but also with supplemental training on the specific technologies, methodologies and processes used within their organizations. Such training ranges from informal brown-bag sessions, to in-house classes, to online learning, to attendance at industry conferences and vendor seminars.

Many development shops give developers flexibility to buy books and other materials to enable self-learning. Training companies, too, can bring new hires—and old hands—up to speed on the latest tricks, as well as teaching the core fundamentals that the universities forgot.

So, while we're all frustrated with the blank stares and lack of instant productivity shown by recent graduates, don't look at this as a failure of the educational system. In most cases, the goal of a college education isn't to prepare students to begin designing the latest Web services application, migrate a client/server stack onto a cluster, or to teach the specific techniques that protect against a SQL injection attack.

The schools have laid the groundwork. But you'll have to take the students the last mile yourself. ■

SOAs Are Turning the Corner

In the past year, service-oriented architectures have become mainstream because of their promise to provide business agility and flexibility through integration, productivity and reuse. Organizations across many industries are now investing in SOA strategies in order to put their IT house in order. In fact, a recent Forrester report found that more than 70 percent of large enterprises, as well as many small and medium-sized businesses, are currently deploying SOAs.

The market has seen numerous vendors emerge with SOA offerings and services, and major analyst firms have pushed a positive outlook on the market. With the hype and promise of SOA continuing to build, and initial adopters of the various technologies supporting SOA beginning to realize ROI, it is important to keep in mind that there are a number of areas that need to be addressed for the full promise of SOA to be realized.

First, all the hype has led to a certain amount of confusion. SOA does not equal Web services—in other words, a Web service that exposes a particular business function may very well be too fine-grained or too narrowly defined (i.e., application-specific) to be considered a valid element of an SOA. SOA is an

approach to enterprise architecture that abstracts IT functionality into business-oriented services. Getting an SOA right means spending some upfront time thinking about key business processes and how they can be supported by a set of common underlying services.

SOAs will deliver significant financial and efficiency benefits only to the extent that they enable disparate projects to reuse common services that support key business processes. The long-term ROI of SOA will best be measured by the ability to rapidly implement new applications and integrations based on existing services, enabling organizations to react quickly to changing market demands, while simultaneously reducing both development and operational costs by eliminating redundant code. This of course is easier said than done. Achieving this “SOA Nirvana” requires a governance process that supports, tracks and manages service production and consumption within an SOA.

BEST PR FOR GOVERNANCE

Establishing governance functions at the onset of an SOA

project is important for a number of reasons. Countless vendors are providing solutions that facilitate the deployment of SOA, such as UDDI registries, Web services security tools and XML registries, and others have begun to sell products that can do things such as monitor Web services performance and operations.

All of these solutions are valuable in an SOA environment, but the full potential of SOA will not be achieved unless there is a structure in place that gives management (and their adjunct governance arm, the enterprise architecture team) the ability to view the various moving parts associated with service development and deployment and track them throughout the application development life cycle.

Giving management this insight, and being able to offer developers access to information on a service—be it the history of the service, details on its performance, configuration, compliance with licenses, security posture, etc.—brings the promise of SOA full circle.

A big part of the governance process, of course, will be man-

Brent Carlson



Guest View

Letters to the Editor

NO GUARANTEES

Dan O'Dowd's letter [Letters to the Editor, Aug. 1, page 32] is right, but also contains some comparable mistruths in taking exception to the two too-flip “truths” that there is “no bug-free software” and there are “no guarantees of quality.”

It indeed is possible for software to be bug-free, but it is impossible to know for sure that it is bug-free. Even avionics software, which I and many other frequent fliers depend on for our very lives, may very well have bugs, perhaps many bugs. The fact that passengers are not aware of them doesn't mean bugs don't exist; and the fact that a bug hasn't manifested itself yet doesn't mean it won't.

What one can say is that a variety of techniques together provide a reliable basis for

confidence that the likelihood of defects is low, especially for defects with high impacts. Apparently Dowd's product is such a technique, and good for them, although it undoubtedly was not used for many airplanes that have seemingly bug-free flight-critical software.

A guarantee is an economic decision to pay damages if a risk comes true, but it doesn't mean there is no risk. A certification provides a basis for believing the likelihood of a risk is low, but it doesn't guarantee the risk won't occur. Adherence to standards does not by itself necessarily prevent liability for damages. A guarantee would mean the FAA, or perhaps Dowd's company, agrees to pay if a plane's certified critical systems fail. I

don't think either would say there was such a guarantee.

Robin F. Goldsmith

Go Pro Management

Editor's note: Robin F. Goldsmith is the author of “Discovering REAL Business Requirements for Software Success.”

BEAN COUNTER

Allen Holub's column “Visual Java” [July 15, page 35] indicates that JSR 273, Design-Time API for JavaBeans (JBDDT), is opaque and not open for public observation and feedback, which is entirely untrue. It is a public, open-source project on Java.net called “jbddt-spec-public.” The entire API (source and JavaDoc) in its original and in-process form is there. People are encouraged to join the Java.net project and participate in the development of the specification.

aging the tension of near-term business priorities against broader SOA objectives. Companies must make sure to guide the business functionality of services and get enough real, live business requirements applied against the services that are being developed so that they have a chance to build general services instead of point-specific services that meet one specific business process need.

To accomplish this, a combination of "bottom-up" and "top-down" approaches is best. Bottom-up refers to the development of services based solely on immediate project needs. If one takes just this approach, the service layer becomes what SOA is attempting to prevent—YALOT (Yet Another Layer Of Technology), or more spaghetti code that implements a monolithic application in a different technology instead of improving business process flexibility.

Similarly, services also should not be exclusively defined in a top-down manner. Top-down business process analysis often leads to one of two outcomes: "analysis paralysis," continual refinement of a model hoping to reach perfection (which never comes), or "Big Bang" projects that try to "boil the ocean"—defining and implementing everything at once, usually with disastrous consequences.

By combining the two approaches, business services

are developed that can support an immediate project's requirements with enough flexibility to meet future business process needs, both projected and unknown. Selecting development projects whose business processes establish overlapping requirements on common services allows an IT organization to incrementally define those services while meeting near-term objectives.

Two or three points of view (as expressed by these varying business processes) are enough to begin the service normalization process, producing a "version 1" service that is both general enough to support the first wave of development projects and that provides a solid basis for iterative enhancement based on the next wave of project requirements.

Proper governance of SOAs also demands that technical aspects of service development be carefully addressed. For example, architectural, performance and security reviewers may be involved at various software development life-cycle (SDLC) checkpoints to ensure that the services being built are using designated technologies, will perform adequately, and will not introduce security holes into the IT infrastructure.

As important as the business and technical aspects of SOA governance are, governance over service consumability is just as necessary. Unless you are

building trivial Web services (like the ever-popular stock-quote service used so often in demo scenarios), you will need to provide considerable documentation beyond WSDL.

Consider requiring user guides, sample client code and traceability in addition to the original business requirements as part of the consumability governance process. This information, along with other searchable metadata about the service that is ideally managed within a software development asset repository, will make it easy for application developers to find the right service and give them confidence that the service is of high quality and will meet their needs.

Ultimately, you may have built a good service that conforms to your technical architecture and meets your business function needs, but if no one can understand it and no one can find it, what good is it?

GOVERNANCE IS KEY

SOA has most definitely turned the corner. It has gone from an architecture that organizations "are considering" and "see the benefits of" to an architecture that is in actual deployment. Early adopters are experiencing encouraging initial returns, but the ROI is expected to spike as services are reused time and again in an enterprise.

With the emergence of SOAs, governance processes

are a must-have and software development will evolve to stress the quality and iterative top-down/bottom-up approach to the development of services. Orchestration tooling being built on top of services will progress as SOA progresses. I should point out that there is some good initial work being done by Microsoft with BizTalk, IBM with WebSphere Business Integrator, and other tools that are on the market. As the SOA industry matures, these and other tools will continue to develop their capabilities.

In terms of standards (I know it's on your mind), BPEL has emerged showing promise as a way to bind services together into applications. It gained a lot of ground in 2004 and so far in 2005, and I expect its momentum to continue as more companies begin incorporating SOA into their IT plans.

Will SOA finally be the answer to our interoperability woes? Only time will tell, but the early returns are promising. As we move forward, keep in mind that establishing a governance process at the start of your SOA initiative will enable you to maintain control of your assets and ensure that enterprise technology is properly aligned to support business goals. ■

Brent Carlson is co-founder and vice president of technology at LogicLibrary, which sells asset-management tools.

As for the comment about not being convinced that the expert group knows enough about the OO principles to fix the problem of the procedural idiom corrupting otherwise object-oriented code, I beg to differ. Please do a little research on the members of the EG, and you will be surprised to learn the rich depth of backgrounds. We are very well equipped to handle this problem, but we'd love your input too!

Joe Nuxoll

Editor's note: Joe Nuxoll is the spec lead for JSR 273.

WHAT DO YOU THINK?

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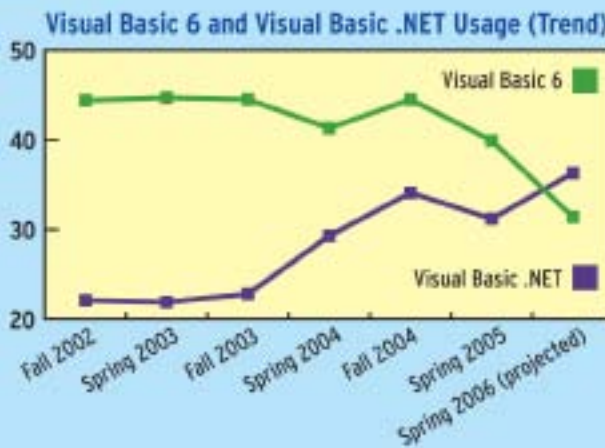
Is Your Organization Still Using Visual Basic 6?

Software development market researcher Evans Data predicts that by spring 2006, usage of Visual Basic .NET will outstrip Visual Basic 6, its predecessor development environment and industry stalwart.

The prediction was published in the Evans' 2005 North American Development Survey, which showed that VB6 usage in the spring of this year had dropped to its lowest level in three years, down from a recent high of about 44 percent last fall.

Meanwhile, data shows that VB.NET, the successor to VB6, for the most part steadily increased its share of developers to a high of 34 percent last fall.

Evans attributes the decline of VB6 to Microsoft's announcement that it would discontinue VB6 support; Microsoft in March began charging developers extra for support. But perhaps more interesting is that VB.NET usage also has dropped off in the past six months and is scarcely any higher than it was a year ago. "Clearly it is a gamble to try and force developers into VB.NET," the researcher said. However, North American developers said they would ramp up usage again.



Source: Evans Data Corp.
www.evansdata.com

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Not IDEal

In previous columns, I've discussed my belief that the world of programming environments will shrink down to two IDEs: Visual Studio and Eclipse. This belief is rooted in capitalist economics, which contends that the marketplace is efficient at winnowing out products that are not competitive or, in this case, no longer profitable. (We'll leave aside for the moment the fact that Eclipse is available for free.) On this basis, the markets have been picking off IDEs far faster than I would have predicted.

Early this year, for example, Borland said it would convert its JBuilder environment over to Eclipse. While it made the few mandatory mumbles about maintaining its current IDE, it did so without conviction. And in view of the latest revenue figures, it seems unlikely it will be maintaining two separate IDEs for long. (Actually, it's unclear whether JBuilder will survive long enough to be converted to Eclipse. We'll see. But one way or the other, the JBuilder IDE is going away).

BEA's much-ballyhooed WebLogic Workshop is going Eclipse. And Oracle has made its JDeveloper environment available for free. Despite a recent upgrade, Sun's NetBeans is falling further in market position, and even great Java IDEs, such as IntelliJ from Jet-

Brains, are having a hard time treading water. Everyone is being eclipsed.

In the Windows development environment, domination by one IDE—Visual Studio—has existed for a while. Borland's C++ Builder and C# Builder are just flecks on the windshield. No one competes with Microsoft's IDE, and if someone were tempted to do so, Redmond's very nice Express development environments (which can be downloaded at no cost from lab.msdn.microsoft.com/express/visualc/default.aspx) should discourage them sufficiently.

Unfortunately, the two dominant environments don't compete and are already showing the costs of lack of good competition. We see in the Intel-AMD skirmish the benefits of competition even when one player is truly dominant. But the IDE market is not like AMD vs. Intel; it's more like Microsoft Office vs. nobody. And the same weak product advances are starting to show based on the new releases announced during the past few months: Eclipse 3.1, which shipped at JavaOne, and Visual Studio 2005, which is in beta 2 tests and should ship the week of Nov. 7.

Let's start with Eclipse. Version 3.1 is

the annual release. What's new? Let's put it this way: When the second entry on the list of new features is support for bidirectional text, you know not much has changed. Essentially, the product has been tweaked for performance and somewhat better handling of the odd task.

Visual Studio 2005 is in about the same

Integration Watch



Andrew Binstock

shape. Microsoft's Visual Studio Team System, the company's new enterprise ecosystem, is important and remarkably extensive, but the IDE itself is pretty much the same. Even small innovations that it should have borrowed from Eclipse are absent. Most notably Eclipse's continual background compilation is missing. (This feature is exceedingly useful because it highlights syntactical errors as you type, so you don't have to compile to discover you forgot a semicolon. IntelliJ and Eclipse have had this feature for years.) So much for competition.

Eclipse has recently been emphasizing its support for C/C++ development. You'd think this would be important because it would be the first time Eclipse and Visual Studio have overlapping turf. But you'd be wrong. Even though Eclipse supports C++ development on

Windows, it will not support Microsoft compilers—as a matter of policy.

I spoke with Eclipse Foundation executive director Mike Milinkovich about this at JavaOne, and he reaffirmed the no-Microsoft-compilers position with no further detail. It's rumored this position results from pressure by IBM. It's the kind of distortion monopoly brings: In a competitive market, you couldn't choose to not support so huge a segment of the market.

Likewise, we can be sure that Microsoft will not be poaching Eclipse's Java turf to push its J# environment, or pushing its C++ environment onto Linux via Eclipse. (Mono can do that, no?)

Economics tells us that in a competitive market, domination by a single player almost invariably affects consumers badly. The two predicted results are: Prices rise and innovation diminishes. Prices have not risen for Eclipse or Express—the IDEs are still free, although the ecosystems they support—IBM's Rational product line and Microsoft's Team System, have both become hugely expensive.

However, the sad story is the lack of important innovation. And, as scenarios from other similarly situated market segments have shown—take C++ compilers, Java compilers or debuggers, for example—once products reach this point, they rarely improve much. ■

Andrew Binstock is the principal analyst at Pacific Data Works.

Learning UML 2

It's a paradox that object-oriented systems are both easier to maintain and more complex than procedural systems. That's one of the reasons, I think, that I've had poor luck with hybrid/procedural systems. Hybrid systems seem to combine the bad points of both approaches (difficult maintenance and too much complexity) without the benefit of either.

Even pure OO systems are complicated, however, and without some sort of road map, it's almost impossible to write, much less maintain, the code. That road map is, more often than not, a set of Unified Modeling Language diagrams that present the structure of the code in graphical form. UML underwent a significant extension last year, adding a bunch of drawing elements and tweaking the existing elements. These modifications were not met with universal praise.

Some of the elements, for example, are experimental. They are concepts that someone on the committee thought would be a good idea but which were not used in practice, and might never be used. Some UML users, including myself, worried that putting an experimental idea into a standard would add complexity without much benefit. Whatever your feelings on the new elements of UML, it will behoove you to learn about them.

Unfortunately, the official OMG UML

2.0 standard is literally thousands of pages of incomprehensible gobbledygook. (Get it from www.uml.org/#UML2.) It's an interesting comment on the standard that Martin Fowler's "UML Distilled, Third Edition: A Brief Guide to the Standard Object Modeling Language" (Boston: Addison-Wesley, 2004) presents everything of importance in 175 pages. Fowler's book is a great way to come up to speed with UML if you're already familiar with both OO and visual modeling. He just presents the notation, assuming that you already know the concepts the notation represents. If you already know UML, this is the book for you.

On the other hand, if you'd like a more tutorial-based introduction to UML, the second edition of "The Unified Modeling Language User Guide," by Grady Booch, James Rumbaugh and Ivar Jacobson (Boston: Addison-Wesley, 2005), just came out. Though Booch & Co. are a bit more academic in their language than I'd like, their presentation is solid, thorough, and like Fowler, vastly more accessible than the actual OMG standard. Booch's book will be better if you've never seen UML before.

These two books complement each

other nicely. Booch presents a better introduction for the uninitiated, and Fowler provides a better quick reference. (There are also a bunch of online UML references, including my own at www.holub.com/goodies/uml. Google "uml reference" to find others.)

The one downside to both of these

Java Watch



books is that they present UML out of context. That is, they present the notation but don't explain how you might create a UML drawing in the process of design.

Put another way, UML is just a notation, in the same way a sentence diagram is a graphical representation of a sentence's structure or an ERD diagram represents the structure of a database. Learning sentence diagramming does not teach you how to write sentences. Learning Fowler's ERD notation does not teach you how to design databases.

Many people confuse "learning UML" with "learning OO Design." Indeed, I am often approached by people who ask me to teach a UML class, when they really want a design-using-UML class. Learning UML is like learning the syntax of a programming language. Don't confuse that with learning how to program.

If you already know how to design a database, then learning Fowler's ERD system will be a snap. The drawings will make perfect sense to you, and you'll intuitively understand what they're for and how they work. If you're new to databases, a book on ERD diagrams that simply explains the notation will seem incomprehensible. Similarly, if you already know how to design, learning UML is trivial, but without that background, it will be difficult for you to see the value in UML.

The drawback of books such as Booch's and Fowler's is that they can't really put UML into context. This omission is not a flaw—it just goes with the territory. OO Design is a topic so large that it simply can't fit into a single book. Learning design is as complicated as learning programming—it takes two or three years of solid work to get good at it.

Consequently, UML—and both books—will be difficult if you don't already know why UML is useful. You have to learn UML in the context of learning OO Design so that you start with an understanding of the concepts the pictures represent. The Booch book does contain some discussion of process, but it's sketchy. I'll talk about a few good OO Design books in future columns. If you do know some design, however, I highly recommend Booch's and Fowler's books. ■

Allen Holub is an architect, consultant and instructor in C/C++, Java and OO Design. Reach him at www.holub.com.

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Moving to 2005

For a summer with no official releases, Microsoft sure had a summer full of releases. Determined to keep the geek masses pale and stooped despite the weather, Redmond filled up our download queues with beta releases of huge products, from the soon-gold Whidbey to the over-the-horizon Longhorn. There also were a number of interesting smaller downloads, and the sheer volume of blogging coming out of the Pacific Northwest is more than enough to occupy whatever time we've saved with advanced anti-spam filters.

Visual Studio 2005, nee Whidbey, is firming up well, although I must say the transition from Visual Studio .NET 2003 can be somewhat frustrating. Not because of binary incompatibilities (although, to be sure, they exist), but because of mental stumbles.

Unlike the Java world, where one tends to jump from IDE to IDE, the precise keystrokes and window layouts in Visual Studio 2003 have become very familiar over the past several years. Anything different, no matter how trivial, sparks a moment of irritation; whether the new icons in the Solution Explorer tabbed dialog are harder to differentiate is hardly the point—just noticing them is enough to be annoying.

More important, there are many new

features added to VS 2005, and many are not directly related to editing code. From testing to datacenter design to software process management, there are a lot of menu items and windows available. These vary across the role-based SKUs that Microsoft is promoting, and for those who live within Visual Studio, all of this over time will be reduced to muscle memory, but I anticipate a vocal minority complaining of feature bloat and loss of focus.

As one of those who travel between the worlds of .NET and Java, I have to admit to feeling a little overwhelmed at the prospect of maintaining productive mental models in both Visual Studio 2005 and Eclipse.

One of the focuses of VS 2005 has been an emphasis on contextual awareness; the IDE tries to surface what it "knows" about the task at hand. Sometimes, this is brilliant: Subtle colored strips along the edit-window edge tell you which lines have been edited during a session. Other times, the effort is less successful: The "troubleshooting tips" that accompany a `NullReferenceException` get old about as fast as a paperclip helping you to write a letter (Tools, Options,

Debugging, uncheck "Enable the exception assistant." You're welcome.)

The various languages diverge both in their expressive capabilities and in how they're edited. C#, for instance, may have the strongest refactoring support, but it also has an IntelliSense "feature" that seems bent on parameterizing all generics with type `TabAlignment` (Tools, Options, Text Editor, C#, IntelliSense, "Committed by typing." You're welcome again.)

The language divergence which I've long described as the unifying theme of Whidbey is real. In my very first client engagement using .NET 2.0, we're facing issues relating to Visual Basic's "My" namespace and C#'s anonymous delegates. Where previously we could discuss designs without mention of VB or C#, we now have to pause to assure that a technique will hold up across languages. While I applaud a world with a diversity of computer languages, another part will look back upon the past few years, when languages converged, with a certain wistfulness.

Whatever the bumps in the road, though, there can't really be a lot of hesitation about switching to Visual Studio

2005. The language improvements are compelling, the libraries and CLR infrastructure have advanced, and ASP.NET 2.0 is a slam-dunk choice for Web sites. This project? Stay with VS 2003. Your next one? Go with Whidbey.

I persist in using the name "Whidbey" for a couple of reasons. For one thing, just as sportswriters use a dozen nicknames for "ball," so, too, does one seek alternatives to "Visual Studio 2005 Team System." For another, "Whidbey" isn't a bad name. It rolls off the tongue pretty well, as do "Indigo," "Avalon" and "Longhorn," all of which have now been retired from official Microsoft discussion.

Now, "Longhorn" turning into "Vista" I can see: Outside of Texas and British Columbia, people might not have an immediately favorable reaction to "big dangerous bull." But what genius traded "Avalon," with its connotations of both Arthurian splendor and semi-obscure "I Love the '80s!" band Roxy Music, for "Windows Presentation Foundation"?

As for "Windows Communication Foundation," the utterly forgettable replacement for "Indigo," it not only reduces to a generic three-letter acronym, it spoils the joke for the Web site I was going to produce that detailed the private, undocumented parts of the API. Anyone want to buy the domain `indigonads.com`? ■

Larry O'Brien is a technology consultant, analyst and writer. Read his blog at www.knowing.net.

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As vice president of technology and consulting at Visual Numerics, Sean FitzGerald is responsible for leading the development and implementation of strategy and vision for current and emerging technologies and services. FitzGerald holds many technology certifications, in addition to a B.S. in systems administration and an advanced degree in general management.



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Prior to joining Visual Numerics, Doolittle was product manager at Spinnaker, with responsibility for software used to measure the performance of stock market analysis. He earned his B.S. in chemical engineering from the University of California at Davis and his M.B.A. from the Haas School of Business at U.C. Berkeley, where he was awarded Beta Gamma Sigma honor society membership.



Dr. Edward Stewart
Expert in Numerical Analysis for Finance Applications
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Edward Stewart received his Ph.D. in physical ocean science and engineering from the University of Delaware. Stewart has experience in many quantitative areas, including quantification and interpretation of statistics and probability, coordination and analysis of large data sets, frequency-domain time-series analysis, ordinary and partial differential equations, finite-difference numerical modeling, nonlinear dynamics and linear algebra. He has also been a major contributor in the development of new features and algorithms in PV-WAVE and the IMSL numerical libraries. Stewart has published many journal articles in areas relevant to his field.

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Microsoft in LAMP's Glare

The LAMP stack is shining brightly up at Microsoft—too brightly, perhaps, for the longtime opponent of open-source software.

The increasing popularity of the Linux operating system and the MySQL database are beginning to eat away at Microsoft's bottom line, as companies move from experimentation to implementation of the alternative software. This was evident at the recent LinuxWorld conference in San Francisco, where corporate acceptance of the communal operating system could be plainly seen on the name tags of the attendees.

But Microsoft did not get to be the largest software company on the planet by resting on its laurels (proof of monopolistic behavior notwithstanding). The company has taken heed of the old saw, "Know thine enemy." It has created a lab up in Redmond with a mix of Linux, Unix and Windows boxes as it gets down to the serious business of ensuring interoperability, which flies in the face of everything Microsoft's employees have practiced.

Despite its monopoly presence in operating systems—or perhaps because of it—Microsoft has been slow to adapt to market realities. One of these realities is that most big enterprises are running all kinds of operating systems and databases. While there are plenty of shops that run Microsoft software exclusively, many more are heterogeneous. Microsoft continues to preach, "Open source is bad. Linux is bad. Microsoft is good." But like the unsure third-base coach who puts up the stop sign with his left hand but also waves the runner home with his right, Microsoft is engaged with Linux in the

lab to see how best it can keep the upstart off its turf—and where customers demand it, learn to live together in relative peace.

Our editor-in-chief, Alan Zeichick, in San Francisco for the big LinuxWorld conference, noted that Microsoft had its henchmen there to lure reporters away from the show. In SD Times' News on

Industry Watch



Thursday newsletter for Aug. 11, he wrote: "Microsoft was attempting to woo reporters and editors out of San Francisco's Moscone Center and over to a nearby restaurant with the offer of a three-hour lunch and presentation. There was no solid agenda that I could see, but it seems the plan included demos and one-on-one meetings with Microsoft product managers. You can guess for yourself what the purpose was. 'Quite a coincidence that you're doing this during LinuxWorld,' I said to the nice public-relations person who tried to get me to attend. 'It sure is,' she laughed. I declined."

Meanwhile, the open-source Java platform provider JBoss last month announced it was revamping its migration program to try to lure businesses running applications on systems from competitors IBM and BEA. The three are wrestling for the top spot in the Java platform market, but they're also carrying the Java mantle against Microsoft.

If JBoss can outperform IBM and BEA to win the Java market with its second-generation open-source business model (give away the software, charge for service and support), there's every reason to think those same advantages (low cost, based on standards) will help it win market share from Microsoft as well. Microsoft, with its actions at LinuxWorld and the cre-

ation of a Linux lab in Redmond, understands this all too well and is starting to act.

THE VISA BILL

The announcement last month by the U.S. government that the number of petitions for 2006 H-1B visas already surpasses the cap allocated for the whole year puts a twist on this issue's Special Report and editorial. These visas are sought by companies looking to retain foreign-born individuals, many of whom have been recruited from American colleges and universities.

Is it the schools that are failing to turn out graduates ready to work, or is it that schools are failing to turn out American graduates ready to work? Time and again, studies have shown that the number of U.S. students enrolling in mathematics, engineering and computer science is declining. Meanwhile, corporations starving to fill important positions in those areas are turning to foreign-born students. The Information Technology Association of America, and Microsoft's Bill Gates, among others, are leading the call for raising the cap on H-1B visas or eliminating it entirely, so the U.S. can retain its global leadership position in technology fields.

H-1B workers can stay in the United States for six years upon winning approval, and then must leave the country for a year before returning under a new visa. The high salaries they are paid here keeps them coming back.

However, if America can't produce Americans capable of filling these highly specialized, highly technical jobs, can America keep its leadership position? Fewer H-1B visas, not more, will force educators down to the elementary-school level to make math and science higher priorities. If U.S. schools fail, when the bill comes due, the tab will be nothing less than second-class status for U.S. technology. ■

David Rubinstein is editor of SD Times.

BUSINESS BRIEFS

Frankfurt, Germany-based **Software AG** announced last month it has acquired Germany-based **Casabac Technologies GmbH**, maker of browser user interface tools for developing Web-enabled enterprise applications. Financial terms of the deal were not disclosed. Software AG said the companies had been partnering since mid-2004, and that the Casabac team will be brought into Software AG as the UI Technology Department. The company is looking to build out its XML-based integration and business process management portfolio of products. The acquisition is the second of 2005 for Software AG; in February it bought out Israel-based **Sabratec Ltd.**, which made mainframe integration software. . . . **Yahoo** will spend US\$1 billion to acquire 40 percent of **Alibaba.com**, a China-based Web auction company. The deal will bring together Yahoo's search operations, which are second in China, with Alibaba's B-to-B and consumer auction operations, as well as Yahoo's Chinese mail and messaging operations. The merged entity is valued at \$4 billion; Alibaba's CEO, Jack Ma, will run the company. China is the world's second-biggest online market after the United States, with users expected to surpass 120 million by year's end. . . . **Novell** has said it will

open a research and development center and new regional offices in China, hoping to accelerate the growth of the Chinese software industry. Novell recently announced an agreement with the **China Standard Software Co.** to develop and deliver regionally customized software. Novell's R&D center will open in Beijing by the end of the year, while support centers will be created in Guangzhou and Shanghai, the company said. Also, Novell is launching openSUSE.org.cn, a dedicated Chinese language site for the recently announced openSUSE project.

EARNINGS: NEON Systems last month announced revenue of US\$4.3 million for its first-quarter FY2006 ended June 30, an increase of 20 percent from the \$3.6 million the company reported for the same quarter a year earlier. The company posted a net loss of \$1 million for the quarter, or 11 cents per share, compared with net income of \$967,000, or 10 cents per share, for the year-earlier period. NEON also announced a partnership with **WebMethods** that will allow that company to extend its Fabric business integration product suite with NEON's new Shadow RTE mainframe integration product. ■

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The three-day conference program packs in six day-long tutorials plus 56 90-minute classes. The faculty was hand-picked for its technical expertise and ability to communicate. You'll meet and learn from industry luminaries like Scott Barber, Ross Collard, Elfriede Dustin and Rob Sabourin. The program also features three keynote presentations to help give you a sense of where the indus-

try is headed and what challenges you'll likely be facing next year.

While participating in the technical program is important, equally valuable is the opportunity you will have to meet with other software professionals outside the classroom. Conference activities are planned so as to maximize your learning experience while leaving you time to compare notes with your classmates and confer with members of the faculty. As an added bonus, the conference schedule and format will provide time for you to discover the latest products, which will be presented in the exhibit area, and pick the brains of the tool vendors.

Read through the class listings and build a custom course of study over three days that will give you and your team tools and techniques that you can take back to the office and put into effect immediately.

We look forward to seeing you at the Software Test & Performance Conference.

Lindsey Vereen
Conference Chairman



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Join hundreds of other software developers, development managers, test/QA managers and senior test professionals at the 2005 Software Test & Performance Conference!

More than 60 classes and full-day tutorials cover software test/QA and performance issues across the entire application life cycle, making this event appeal to a higher level and more diverse group of development and test/QA professionals than traditional training programs for test-team members.

Developing for the Web? Using .NET, J2EE, or Eclipse? Worried about SQL injection, buffer overflows and hackers? Managing test automation across many locations? If you are a software developer trying to wring better performance out of your software systems, a test/QA or development manager responsible for improving the quality of your company's software or a test/QA specialist who wants to take your skills to a higher level, then the Software Test & Performance Conference is for you.

The Software Test & Performance Conference provides you with education on the newest techniques, such as agile methods and testing with JUnit. The faculty will share tips and tricks to improve fundamental practices such as functional testing, requirements gathering and load testing. You'll learn ways to implement quality assurance across the entire application development life cycle, how to pinpoint and fix performance bottlenecks and how to adapt familiar testing paradigms for emerging technologies.

Attend the Software Test & Performance Conference on November 1-3 in New York City—because when it comes to improving software quality, education is the real Best Practice!

Monday, October 31

4:00 p.m. – 7:00 p.m. Registration

Tuesday, November 1

8:00 a.m. – 7:00 p.m. Registration
 9:00 a.m. – 10:45 p.m. **Tutorials**
 10:45 a.m. – 11:00 a.m. Coffee Break
 11:00 a.m. – 12:30 p.m. **Tutorials**
 12:30 p.m. – 1:30 p.m. Lunch Break
 1:30 p.m. – 3:00 p.m. **Tutorials**
 3:00 p.m. – 3:15 p.m. Coffee Break
 3:15 p.m. – 5:00 p.m. **Tutorials**

Wednesday, November 2

7:30 a.m. – 7:00 p.m. Registration
 8:15 a.m. – 9:00 a.m. **Industry Keynote**
 9:15 a.m. – 10:45 a.m. **Technical Classes**
 10:45 a.m. – 11:00 a.m. Coffee Break
 11:00 a.m. – 12:30 p.m. **Technical Classes**
 12:30 p.m. – 1:30 p.m. Lunch Break
 1:30 p.m. – 3:00 p.m. **Technical Classes**
 3:00 p.m. – 7:30 p.m. Exhibits Open
 3:00 p.m. – 3:30 p.m. Coffee Break
 3:30 p.m. – 5:00 p.m. **Technical Classes**
 5:15 p.m. – 6:00 p.m. **Keynote Presentation**
 6:00 p.m. – 7:30 p.m. Attendee Reception

Thursday, November 3

7:30 a.m. – 4:00 p.m. Registration
 8:15 a.m. – 9:00 a.m. **Industry Keynote**
 9:15 a.m. – 10:45 a.m. **Technical Classes**
 10:45 a.m. – 11:00 a.m. Coffee Break
 11:00 a.m. – 12:30 p.m. **Technical Classes**
 12:30 p.m. – 2:00 p.m. Attendee Luncheon
 12:00 p.m. – 4:00 p.m. Exhibits Open
 2:00 p.m. – 3:30 p.m. **Technical Classes**
 3:30 p.m. – 4:00 p.m. Coffee Break
 4:00 p.m. – 5:30 p.m. **Technical Classes**

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"A way to get exposure to a variety of subject matters and views from many people. Makes you realize your strengths and weaknesses."

—Joyce Bordley, Business Systems Consultant
AIG

FULL-DAY TUTORIALS

Tuesday, Nov. 1
9:00 a.m. - 5:00 p.m.

T-1 Delivering Test Automation Success Through People, Methods & Tools

By Hans Buwalda

Successful test automation is vital to increasing the efficiency of QA efforts. If they're done correctly, it's possible to develop tests earlier, run them faster and repeat them more reliably when the software under test becomes available. Many organizations now recognize that it is critical to make the right choices in organizing the work, developing the tests and architecting the automation, whether scripted or non-scripted.

This tutorial presents state-of-the-art techniques—including data-driven testing, keyword-driven testing, and scripted and non-scripted automation—that can help deliver test automation success. As a framework, the class will use Action Based Testing, which has been proven effective and efficient for many testing organizations around the world. An important focus for the day is the managerial perspective, such as how to set up the right team and how to gain commitment from managers and other stakeholders.

You will learn:

- Effective integration, fine tuning and management of testing and test automation.
- How to apply good test design techniques, such as Soap Opera Testing.
- How to use frameworks like action-based testing to ensure visibility, maintainability and scalability.
- How to incorporate an automation framework along with your existing process.
- How to optimize the use of your testing staff's diverse skill sets.

T-2 Twenty-One Ways to Spot—and Fix—Requirements Errors Early *By Robin Goldsmith*

While many organizations have begun paying closer attention to defining requirements, few fully realize the need to know that their requirements are accurate and complete, nor do many know how to test requirements effectively. Most rely on one or two weak methods and have little awareness of how many errors they've missed—errors that later turn into expensive feature creep. This interactive class explains why it's so hard to test requirements, and it introduces 21 increasingly powerful methods to help you find frequently overlooked requirements errors when they are easiest and least expensive to fix.

Following the instructor's proven CAT-Scan approach, participants apply the techniques successively to a real case and discover how each different method reveals additional, otherwise overlooked defects in the requirements. Participants learn ways to find previously overlooked requirements, increase meaningful customer/user involvement, enhance communications and understanding, and test the adequacy of requirements definitions.

T-3 Testing Quasi-Agile Projects: Practical Strategies for Today's Iterative Development Environment

NEW

By Timothy D. Korson

In the highly iterative, fast-paced environment of agile development projects, the traditional approaches to testing, quality assurance, requirements gathering and team interactions break down. QA managers trying to encourage best practices recommended by CMMI and SPICE find themselves at odds with developers trying to adopt best practices as recommended by the Agile Manifesto.

In the end, no one wins. Because of the constraints of corporate policies and management edicts, developers can't fully adopt agile practices. Because the developers do adopt as much of the agile process as they can get away with, the QA team finds that traditional approaches to quality management no longer work. Such projects must succeed in a "quasi-agile" development environment.



This tutorial will introduce you to software development processes and practices that affect your world. You will learn practical strategies for effectively integrating testing processes with modern software engineering processes. You will learn how to create effective tests, both component-level and system-level, for modern software systems. Detailed case studies will convey specific techniques for testing both components and entire systems.

T-4 Testing Techniques: Theory And Application *By BJ Rollison*

NEW

This tutorial presents the formal theory and practical application of functional (behavioral) and structural (coverage) testing techniques. The class will teach functional testing techniques, including exploratory testing, boundary value analysis, equivalence class partitioning and combinatorial analysis. Structural testing techniques covered include statement coverage, decision/branch coverage, condition and basis path coverage.

By attending this tutorial, you'll learn how to use functional testing techniques to establish a solid foundation and min-

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—Shari Pagley, *Testing Supervisor*
Sunrise Senior Living

Full-Day Tutorials

imum baseline of test cases. You'll understand how structural testing techniques can be used to design additional tests from a white box approach to complement the test effort, to ensure that critical paths in the code have been exercised, and to achieve higher code coverage results. You will also learn how to apply both black box and white box test design approaches to test more effectively.

T-5 Using Metrics to Improve Software Testing

NEW

By Alfred Sorkowitz

Software metrics can improve your organization's testing process by providing insight and early visibility into the real status of the testing effort, and in making assessments as to whether progress, productivity and quality goals are being met. This tutorial presents a practical guide on how to take advantage of new metrics tools/techniques to improve the testing process. The metrics-based tools and techniques have successfully been used by software test teams, software developers and test/QA teams. Some of the things you will learn in this tutorial include:

- The cost of inadequate software testing: the economic impacts of poor testing, from a recent report by the National Institute of Standards and Technology.
- A set of government/industry best practices metrics, with numerous examples, variations and case studies. These metrics can track the real status, quality and productivity of the testing effort, as well as provide an indication of future problems.
- Software Complexity Metrics, a new structured testing methodology that uses metrics to aid in developing software that is easier to test and maintain, and for selecting an appropriate set of paths for more thorough testing.
- An overview of testing concepts and principles, including a metrics-based testing procedure that can aid in improving the quality of unit testing.
- How to integrate software metrics into the testing process.

T-6 Hands-on Testing Patterns: Best Practices From the Trenches

NEW

By Matthew Young

Most every software professional, from developer to manager, has heard of design patterns. These universal best practices tools express, in a common language, the tribal knowledge of a host of development experts. These same lessons can be applied to testing at all phases of the testing effort, from unit test through integration and system acceptance.

This tutorial will teach you how to use testing patterns as a means to collect the common knowledge of what to do (and not to do) within a testing effort. The instructor will introduce the language and details of each pattern, walking the participants not only through the patterns, but also through the application of the patterns to an actual project. The course will focus on patterns and their application to testing techniques to address:

- Unit testing
- Integration testing
- Database testing
- Web services/Web application testing
- Acceptance testing

Attendees are assumed to have an understanding of an OO-based coding language such as Java, C++ or Perl (code examples will be discussed) and a basic understanding of the mechanisms of the xUnit (JUnit, CppUnit, PerlUnit) family of testing frameworks.

Keynote Address

Mike Milinkovich

Executive Director, The Eclipse Foundation

Wednesday, November 2

8:15 a.m. – 9:00 a.m.



TECHNICAL CLASSES

Wednesday, Nov. 2

9:15 a.m. - 10:45 a.m.

101 Fundamental Rules of Security Testing By Elfriede Dustin

NEW

Software security is becoming increasingly important. QA and test will have to get involved in security testing, and security testing has to be viewed as part of the software development effort. This class discusses both how to fit software penetration testing into the development life cycle, and how to secure your software by trying to break it.

This overview of security testing covers key topics including:

- How to protect Web and application servers.
- Securing site data and user confidential information housed in database servers.
- The danger that components such as ActiveX controls and cookies can pose for exploits and loss of user privacy.
- How to protect transmission of critical user data, such as payment and other private information, via secure protocols.
- High-level strategies for testing the security of your Web site—strategies that can be used as the basis for security test case development.

102 Putting the User Back in User Acceptance Testing By Robin Goldsmith

NEW

User acceptance testing (UAT) is often a source of consternation. Even though the process takes up considerable user time, too many defects continue to slip through, and users increasingly beg off from participating with claims that they don't have the time. Both effects may be symptoms of professional testers' mistaken conventional wisdom about the nature and structure of UAT. In this eye-opening presentation, you'll learn ways to gain user confidence, competence and cooperation. Plus, you'll learn to create user-driven UAT that increases user testing competence and confidence.

103 How to Optimize Your Web Testing Strategy By Hung Q. Nguyen

One of the key strategic challenges of Web testing is the dominance of change. Another key challenge is interdependence. Web applications are fundamentally dependent on cooperating tools and processes. Many of the processes, tools and standards in use by groups that do Web testing were originally developed with simpler and less dynamic situations in mind.

Used by skilled and thoughtful people, in the context of a clear strategy, these processes and tools can add value. But if we allow them to drive our testing practices, they can easily do more harm than good. In this talk, you will learn how to analyze and optimize your Web testing strategy by selecting the right types of tests, how to execute them at the right time with

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"Good for hands-on test managers and testers."

—Steve Boykin, Deputy Program Manager

Citizenship and Immigration Services, Department of Homeland Security

a balanced number of cycles, and how to drive changes to improve your team's testing throughput.

104 Performance Tuning ASP.NET Applications **By Thomas O'Mara**

NEW

Take a look under the hood at performance tuning an ASP.NET application from a systems point of view. This class will help you understand how to set up a solid testing infrastructure, gain an in-depth intuition on critical .NET and ASP.NET components, and monitor the operating system and the ASP.NET application in real time. Attendees should have some knowledge of Windows Server 2003, the .NET Framework, ASP.NET application development and load testing techniques.

In this class you will learn:

- Architecting the foundation: system analysis, application requirements and specifications, and overall application and system objectives.
- The .NET Framework: how to increase performance and reduce system resources requirements in the application.
- ASP.NET Controls from a performance standpoint: Look at the important controls that can cause application bottlenecks. Discuss tips on how to implement the controls from a best practices point of view.
- Performance counters: Identify and discuss a proven set of performance counters on Windows Server 2003 that will provide the real-time feedback necessary for locating performance and memory issues.
- Performance data analysis: a look at fundamental statistics and how to apply these to real-world examples.

105 How to Turn Your Testing Team Into A High-Performance Organization **By Michael Hackett**

All development managers, test managers and their organizations are looking for ways to improve quality. Quality improvement can come in many forms: reducing risks by delivering higher- and predictable-quality product; optimizing time-to-market; increasing productivity; and building a more manageable organization. Some managers look for quality improvement by attempting to implement a more standard or formal process.

This sounds good. But where is the roadmap for how to get there? This class can help! You'll learn how to evaluate your test process and strategy, create a culture for change, implement change, and use effective methods for measuring improvement.

106 Creating Your Own Test Automation Tool **By Christopher Valrose**

NEW

It seems like everyone wants to or needs to automate manual testing, for a variety of reasons. Companies will go out and spend thousands of dollars to buy an off-the-shelf tool, only to find the tool sitting on the shelf years later. So why spend the money on shelfware? Why not build your own automation tool that is fully customizable? This class will detail the process of creating your own automation framework. The framework will allow you to plug in products that need to be tested. The automation framework contains detailed logging, and it records test results into a relational database. It also is completely data- and action-driven. Testers can change the setup, execution, cleanup, and/or expected results ver-

ification without changing a line of source code.

The class will show you how to create an automation framework and will demonstrate the return on investment of using a single framework that can execute automated tests across multiple products.

107 Better Web Stress Testing

By Robert Sabourin

Stress testing is a collaborative testing effort combining the skills and disciplines of both software development and software testing. You know you should be doing stress testing; you're just not sure when to test most effectively.

This class explores effective stress testing, which is particularly important to developers in Internet multi-tier development projects, and it also discusses how stress testing can be managed as a series of experiments to learn about the behavior of the software being developed. You'll learn how to define and organize stress testing experiments, how to identify appropriate ways to implement stress testing in the development process, and some practical and cost-effective techniques for implementing stress testing.

Wednesday, Nov. 2
11:00 a.m. - 12:30 p.m.

201 Pinpointing and Exploiting Specific Performance Bottlenecks

By Scott Barber

One part of the system is always slowest—the bottleneck. Until you remedy that bottleneck, no other tuning will improve performance along that usage path, but before you can tune it, you must first conclusively identify it. Once the bottleneck has been identified, the resolution can be reached more quickly if you modify your existing tests to eliminate distraction from ancillary issues. Pinpointing the bottleneck precisely is an art all its own.

After finding the bottleneck architecturally, often we must create a test to exploit it to facilitate tuning. Bottleneck exploitation tests needn't bear any resemblance to real user activity, but rather should focus on the bottleneck alone. In fact, these tests may not even interact with the system in ways that users can and may interact directly with back-end tiers.

This class will show how the performance testing team and the development team can work collaboratively to analyze results and identify bottlenecks by tier, component and object. You'll see how to design tests to exploit those bottlenecks for tuning purposes with examples using IBM Rational and free tools.

202 Software Endgames: How To Finish What You've Started

By Robert Galen

NEW

We've all survived more than one software project that ended badly, where either the requirements were misunderstood or were implemented poorly. Or overall quality targets couldn't be met because there were simply too many defects. Or the team simply couldn't decide on priorities and in which direction to steer the project.

Many projects fail during testing. Not because of the testing per se, but because of the massive discovery of defects and functional gaps that indicate the true viability of the project. I call this time the Software Endgame, and I've spent a great deal of time negotiating its challenges through numerous software projects.

This presentation focuses on a set of five high-level practices and techniques that will help improve your management and project steering within the endgame, providing guidance that

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**—Wayne Eddy, Development Manager
Production Process**

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will increase the odds of your successfully delivering a project. You’ll learn:

- How to create an endgame delivery map that directs your release and testing milestones via entry/exit criteria.
- The importance of release criteria within the endgame, and high-level rules of thumb for defining them.
- Why a change-control mechanism is important, and some guidelines for successful change control.
- Managing defect repairs—where to focus your efforts and scheduling rules of thumb—plus the many options you have for “fixing” defects.
- Endgame team do’s and don’ts for managers and team leaders.

203 Seven Low-Overhead Software Process Improvement Methods

By Robin Goldsmith

For many, software process improvement is synonymous with high-overhead, long-term, organization-wide initiatives that often are resisted and fail to produce the desired results.

In this interactive presentation, you’ll learn seven methods that can help you make software faster, cheaper and more reliable without all the hoopla. Key to meaningful results is recognizing, measuring and then specifically improving high-payback aspects of the instructor’s proven REAL software process, which often differs considerably from what we presume we are doing. In truly agile fashion, applying these methods proficiently focuses efforts most efficiently on effectively producing useful software from the start.

204 Learning From Failures Before They Happen: Failure Analysis Techniques for Software Engineering

By Matthew Young

This class teaches the practical software engineering application of preventative fault-analysis techniques—important practices that are often thought of more in the context of reliability and hardware engineering efforts.

By placing these tools into the early stages of software engineering, organizations can begin to move out of the “triage” mode of testing/debugging and into the diagnostic testing and error prevention required to produce the high-quality systems demanded by the customer.

Through careful analysis and a customer-focused view, these potential failures can be identified early on in a project and used to drive architecture, development and testing activities. The goal? To increase system quality and help to ensure overall acceptance—before system faults and failures reach the customer.

You’ll learn:

- The practices, benefits and pitfalls of a failure-mode analysis program.
- How to build a culture that views failures as a process and not just a single event.
- Root-cause techniques to stop the cycle of “triage testing.”
- Practical ideas for implementing fault analysis on your projects—from the smallest grassroots efforts to large-scale formalized systems.
- Methods for selling a fault-analysis effort to management as a means to improve the quality, reliability and maintainability of the software system.

205 Integrating the Testing Team Into The Software Development Life Cycle

By Elfriede Dustin

This class teaches, from experience, key concepts and practices that can help you implement an efficient testing program as an

integrated part of the software development process. You’ll learn how to produce quality software without an independent testing team, and what to consider so the integrated software development team will be able to deliver on time and on budget.

The class will cover:

- How a testing team can maintain independence even if the development and testing teams have the same reporting structure.
- Roles and responsibilities of “integrated” testing team members.
- Developing test cases when requirements are not available or are documented only at a very high level.
- Why black box testing by itself is inefficient, but gray box testing is more efficient.
- Why an understanding of the system architecture and underlying components is necessary in order to develop effective gray box test cases.
- How system testability can be increased.
- How the development approach can be structured to support effective unit testing.
- How to prioritize defects in order to meet the go-live date.
- How to manage the “silver bullet” expectations surrounding automated testing.

206 Database Security: How Vulnerable Is Your Data?

By Mary R. Sweeney

There are many levels of software security. How secure is the most important component of your application: your database? Quality control organizations must step up to the challenge of ensuring data security with appropriate tests that focus on this vital area.

In this class, you’ll learn what your test team needs to know about protecting your server, your database connections, controlling access to your database tables and restricting access to the database server itself. If your data is in jeopardy, your entire system is at risk. Learn the basics about testing to ensure protection for the critical database component.

207 Load Generation in Complex Environments

By Alexander Podelko

A “must” task in load testing is workload generation: how you are going to apply load to your system. You cannot do load testing without that. It can be a simple technical step when you know how to do that for your system. Unfortunately, quite often workload generation is a very challenging task for a new system, up to being impossible in the given time frame. It is important to understand all possible options; a single approach may not work in all situations.

The main choices are to generate workload manually (really, an option only if you have few users), to use a load testing tool (software or hardware) or to create a program to do it. Many tools allow you to use different ways of recording/playback and programming. The class discusses pros and cons of each approach, mainly based on experience with distributed business applications.

**Wednesday, Nov. 2
1:30 p.m. - 3:00 p.m.**

301 Just-in-Time Testing Techniques And Tactics, Part 1

By Robert Sabourin

As the Boy Scout credo goes, “Be Prepared.” This class teaches you how to be ready for just about anything in a software testing

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Technical Classes

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—Ella Naydorf, QA/Test Manager
Booz Allen Hamilton

project within the volatile environment of a Web or e-commerce software project. Managers will learn an array of techniques to manage and track software testing in chaotic environments—specifically, projects with continuously changing requirements and shifting priorities. Members of the development and testing teams will learn how, even while working with minimal information, to develop tests and converge the product development effort.

302 Overcoming Requirements-Based Testing's Hidden Pitfalls *By Robin Goldsmith*

NEW

Testing based on requirements is a fundamental method that is relied on extensively. However, its thoroughness frequently can be compromised by traps that testers are not aware of.

In this interactive presentation, you'll learn key sources of requirements-based testing oversights, including: distinguishing business requirements from system requirements; assessing the extent to which the requirements are complete; the premise of one test per requirement; the appropriate level of test case detail; and developers' inclusion of requirements-based unit tests. The class will also focus on:

- The strengths, and often unrecognized weaknesses, of requirements-based tests.
- The importance of testing based on business, as well as system, requirements.
- Determining how many tests a requirement needs.

303 Web Performance Testing: Lessons Learned *by Hung Q. Nguyen*

Performance testing is essential to success on the Web. It gives a business the confidence that when a Web-based system receives its expected customer load each day—perhaps with sudden bursts of traffic due special events, such as promotional campaigns for an e-commerce site, or breaking news for a news portal—it will be able to handle the workload while continuing to deliver an acceptable response time. Unfortunately, planning for and executing the tests that will deliver satisfying results is too often a disappointing experience.

You will learn what you need to prepare for success, as well as how to avoid wasting time and producing non-actionable test results. You will know how to generate test requirements in the dark, understand your statistics before collecting them, and differentiate performance symptoms, causes and potential cures.

304 Lessons Learned in Test Automation, Part 1 *by Elfriede Dustin*

This class will present and discuss a series of automated testing lessons learned from actual experiences and feedback from real projects. You'll learn how to avoid some typical false starts and roadblocks when you implement your test automation efforts.

Part 1 of this class includes a discussion of:

- Better ways to define automation criteria.
- How to avoid duplicating the development effort when designing automated test cases.
- How to create reusable automated test cases.
- The need to verify all vendor claims in your own environment.
- The pitfalls of delegating the tool selection to a reseller or consultant—avoiding hidden agendas.

- Testing tools: making the build-vs.-buy decision, and how to select the right tools.
- Automated test implementation on all projects, vs. choosing a pilot project.
- Tool integration: how to avoid using various tools and maintaining duplicate information in various repositories.

You'll also learn how to avoid losing sight of the testing efforts because developers or testers are too busy coming up with elaborate scripts to automate their unit and system tests.



305 Metrics: How to Track Things That Matter *By Clyneice Chaney*

Metrics programs have often been a dirty word, misused and poorly implemented. This class discusses ways to provide metrics that really matter to organizations and provide visibility into their or their customers' organizations. The class will begin with discussions about why metrics programs fail and will move on to discuss keys to successful metrics programs, developing quality metrics that matter, and ways to implement and maintain these metrics over time.

306 Verifying Software Robustness *By Ross Collard*

Do you like breaking things? If so, this session's for you! It's not enough to design systems for dependability; we have to verify their reliability as well. Software is robust if it can tolerate such problems as unanticipated events, invalid inputs, corrupted internally stored data, improper uses by system operators, unavailable databases, stress overloads and so on. Systems that include both hardware and software are robust if they can tolerate physical problems such as equipment damage, loss of power, software crashes and so on. Since these problems can and do occur in live operation, this session examines how to evaluate a system's robustness within the relative sanctity of the test lab.

307 Recruiting, Hiring, Motivating And Retaining Top Testing Talent *By Jeff Feldstein*

NEW

The expectations today are for increasingly high-quality software, requiring more sophisticated automation in testing. Test and QA teams must work more closely with development to ensure that this sophisticated automation is possible. This has led to software engineers applying creativity, talent and expertise to not just application development, but testing as well.

The speaker uses examples of how his team at Cisco changed the way it tests over the past six years. In this class, he'll review eight points for why test is a better place for software developers than software development, and he'll show how and when

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"Very diverse set of sessions passing great & door-opening information and techniques at a level that many can comprehend."

*—Jessica Navarette, Software Engineer
Alion Science & Technology*

Technical Classes

to express these points to hire, motivate and retain top talent. You'll see how to inspire greater innovation and creativity in your testing processes, and how to manage and inspire test and development teams that are spread across different locations. You'll also learn the place of manual testing in the new environment.

Wednesday, Nov. 2
3:30 p.m. - 5:00 p.m.

401 Just-in-Time Testing Techniques And Tactics, Part 2 *By Robert Sabourin*

Please see the description under class 301.

402 Building Collaborative Performance Testing and Tuning Teams *By Scott Barber*

Performance testing tells us the current performance of our system; performance analysis tells us what the current performance issues are. But what happens after that? Typically, the performance tester gives the results to the development team and waits to be told to "Try the test again." This class will show you how to build a collaborative testing and tuning team, involving both the performance testers and the development team, to greatly enhance the performance testing and tuning process.

403 Making the ROI Business Case For Testing Techniques *By Robin Goldsmith*

NEW

Increasingly, management demands a demonstration of financial return on investment (ROI) before investing in techniques and technology. However, testers traditionally have found it hard to credibly quantify the dollar value of testing techniques, which puts them at a disadvantage. This class teaches basic ROI concepts and how to apply them to evaluating testing alternatives, such as automated tools. You'll learn:

- How to assess both the investment and the return in the language of business.
- How to do value modeling that will provide essential credibility for dollar figures.
- How to put hard, dollar values on soft intangibles.

404 Lessons Learned in Test Automation, Part 2 *By Elfriede Dustin*

We continue to explore automated testing lessons learned from actual experiences and from feedback based on real projects, to help you to avoid some typical false starts and road blocks when you implement test automation efforts.

Part 2 of this class includes discussion of:

- Subject-matter experts and automated testing tools.
- When automated testing doesn't speed up the testing effort.
- Creating mini-development life cycles.
- Automated testing as a side activity.
- Maintenance of automated unit and system tests.
- Real benefits of automated testing.
- Implementing smoke tests.
- Problems with using intrusive automated testing tools.
- Why software developers need to keep automated testing tools' capabilities in mind.
- Understand tool upgrades and how the new tool's features will affect existing test cases or existing functionality.
- Pitfalls of using automated performance testing tools.
- Performance testing tools and the use of extrapolation.

405 Using Scrum to Manage The Testing Effort *By Robert Galen*

NEW

Scrum is one of the agile methodologies, and it focuses on project management in agile and iterative development efforts. It can be successfully applied to testing efforts to renew their focus and drastically improve overall results. In this presentation we will explore the Scrum methodology and learn to apply it practically to your testing cycles.

You'll learn:

- How the Scrum methodology applies to the testing effort.
- How to define a testing sprint goal with your key customers.
- How to manage testing as a product backlog activity, including defining the testing focus with the customer.
- The value of daily stand-up meetings in managing the testing cycle, and how to implement them correctly.
- Why a testing sprint review is important to set the stage for the next testing cycle.

406 Exploiting Web Application Code: The Methodologies and Automation Of SQL Injection *By Matthew Fisher*

NEW

SQL injection is a technique for exploiting Web applications that use client-supplied data in SQL queries without stripping potentially harmful characters first. Despite being remarkably simple to protect against, there are an astonishing number of production systems connected to the Internet that are vulnerable to this type of attack, due to the simple fact of improper input validation.

Developers and quality assurance professionals who design, build and test business-enabling applications generally lack the security knowledge necessary to avoid creating common defects that are so easily exploited by hackers.

In this class, you'll learn about the techniques that can be used to take advantage of a Web application that is vulnerable to SQL injection. The session addresses proper mechanisms that should be put in place to protect against SQL injection, as well as overall improper input validation issues.

407 Failure Modes: Understanding Common Failures in Application Performance *By Ron Bodkin*

NEW

Java and .NET applications exhibit new and complex forms of failure, due to the interactions of distributed components. However, these can be organized into three overall failure modes: episodic, emergent and systematic. Episodic failures cause sporadic and unpredictable problems in application performance. Emergent failures cause gradual or trending performance degradation that can easily be observed, provided you have the correct data. Systematic failures are major

Keynote Address **MARTIN FOWLER**

Chief Scientist, Thoughtworks, Inc.
Wednesday, November 2
5:15 p.m. - 6:00 p.m.



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"If you are considering Automated Testing, this is the best place to automate your learning process."

—Keith Schuman, President & CEO
S&S Programming Inc.

problems that make a system unusable (under sufficient load), and these have traditionally received the most attention in optimization and monitoring.

This class discusses the patterns of application failure, with some common examples in Java; techniques available for identifying and fixing these failures; and how various tools can facilitate in resolving them. Attendees will be best served by having experience in developing, testing or managing component-based applications running on J2EE and .NET. Examples are drawn from Java-based applications, but the principles apply to other environments as well.

Thursday, Nov. 3
9:15 a.m. - 10:45 a.m.

501 Seven Steps to Building a Better Bug Workflow System

By Robert Sabourin

This class addresses one of the fundamental questions of software engineering: "How do we know we are finished?" Managing bugs is a critical part of any software development project. In this highly interactive class, we'll explore the concepts of bug priority and severity, and you will learn how the priority and severity of bugs vary depending on a blend of the business and technical contexts.

Development, project and SQA managers will learn a systematic approach to defining how defect data can be managed. Lead developers and testers will learn how they can contribute to the entire bug workflow life cycle. Which bugs should we fix? Which bugs should we keep? How can we decide consistently?

502 Rapid Business-Driven Testing

By Clyneice Chaney

Structured testing is a vital part of any development project. The problem is that almost no one is given the time and resources to properly execute a thorough test process. In an ideal world, rapid testing would not be necessary, but with most development projects there are schedule crunches and times when a quick assessment of the product quality is necessary.

Rapid testing is a way to scale thorough testing methods to fit arbitrarily compressed schedules. "Rapid" doesn't mean "not thorough," but it does mean as thorough as is reasonable given constraints on time. In this class, you will learn how to use new Rapid Business-Driven Testing techniques, methods and templates that will increase product quality in rapid development projects.

503 Strategies and Tactics for Global Test Automation, Part 1

By Hung Q. Nguyen

We automate software testing to gain speed. We organize our distributed teams globally to maximize round-the-clock coverage and cost efficiency. Both solutions fulfill legitimate objectives. However, implementing them successfully while keeping the risks contained with a high degree of certainty proves to be an enormous challenge.

In this class, through a series of technical and management case studies and real-life examples, you will learn about seven

steps that will deliver return on investment through a global test automation program. You'll learn how to:

- Assess testing strategy and needs.
- Know when and how to leverage automation technology to maximize speed.
- Minimize the costs and risks of global resources.
- Select the right test automation technology for the job.
- Align testing with business processes and development practices.
- Secure and develop competent resources.
- Measure, analyze and optimize for continuing improvement.

504 Testing Tools Inside Eclipse

By Joe Toomey

The Eclipse Test and Performance Tools Platform (TPTP), formerly known as Hyades, provides a flexible, layered infrastructure for integrating testing tools inside the Eclipse Workbench.

This talk will explain the various approaches to integrating test editors, test-control and runtime user interfaces, test definitions, test execution engines and test results in TPTP 4.0, as well as the benefits that accrue from this integration. The talk will be illustrated with references to the exemplary tools provided by TPTP itself for manual testing, and it will show how URL testing and integration of JUnit testing provide an effective test toolkit for the Eclipse ecosystem.



505 Testing XML

By Elliotte Rusty Harold

More and more applications are generating XML documents as their primary or secondary output. XML is much easier to parse than traditional formats. At the same time, it has many syntactic options that make testing output more difficult than testing traditional, less rich formats. Simple string comparison is often too naive to properly test XML.

This class explores the challenges and pitfalls of testing XML documents. It explains what to look for when testing XML documents and, even more important, what to ignore. We'll consider various tools for testing XML, including parsers, schemas, DTDs, canonical XML and XPath. Finally, we'll discuss automating tests by writing JUnit test cases that use XML APIs such as DOM to compare the actual output to the expected output.

506 Performance Management Throughout the Application Life Cycle

By Ron Bodkin

Application performance must be managed throughout the entire application life cycle—from analysis to design, through development, testing and production, and throughout the ongoing cycle

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"Wide variety of practical topics to apply to your work."

—Judy Sukri, Senior IT Specialist
IBM

Technical Classes

of monitoring and new releases. The requirements for tools support vary by life-cycle stage. Virtual-machine improvements, code profilers, performance unit tests, load test generators, enterprise management systems, application performance monitoring and even business activity management software each address specific requirements across various stages of the application life cycle.

This class will review best practices for ensuring application performance and reliability, and will look at effective tools and techniques both old and new. We will discuss the types of problems that are most typically encountered at the various life-cycle stages and review the advantages and disadvantages of the various tools available to assist in performance management within each segment of the cycle. We'll also dig into more detailed examples for Java-based applications.

Attendees will be best served by having experience in developing, testing or managing Web-based applications. Examples are drawn from Java-based applications, but the principles apply to other environments as well.

507 Avoiding the Finger of Blame: Bringing Development and Testing Together With the Business Side **NEW** *By Jim Carty*

As the former manager of a software development team of 125 analysts, developers, system testers and unit testers, this speaker found there were many times where a team's effectiveness and ability to deliver were strongly influenced by its ability to work effectively with the business side and other stakeholders in the organization.

This class will feature real-world examples of how to build a better bridge between software development, testing and performance tuning teams and the ultimate customer, the business user. In this class you will learn:

- Ways to understand the perspective of the ultimate end user, and what it means for you.
- How to manage expectations better.
- How to extract better requirements, and how to get full buy-in when you do.
- How to deal with test tool vendors—making sure they are working for you and not against you.
- How to recognize warning signs that the Finger of Blame is moving in your direction, and what to do about it.
- How to develop and deliver your value proposition to the business side.

Thursday, Nov. 3
11:00 a.m. - 12:30 p.m.

601 Designing and Utilizing Test Matrices **NEW** *By Duri Price*

If we're dealing with a large number of variables, it can be time-consuming to test them all, very difficult to correctly identify which variables are causing a problem, or hard to get the problem to happen consistently. This class will discuss coverage, isolation and combinatorial matrices and how they can improve your accuracy and speed in testing.

602 Managing Culture Shock: A Journey to Organizational Change **NEW** *By Clyneice Chaney*

An organization's culture, people, process and structure are the elements that enable it to function. When a software organization that has a long tradition of doing one type of development and testing moves to different development and testing approaches, it can experience significant culture change from the transition.

This class shows how to integrate a new testing group into a high-visibility project and manage the resulting culture change. The culture change is viewed from two perspectives: the testing organization undergoing the transformation, as well as the development organization, which must react to and work with the new group.

Keynote Address

ADAM KOLAWA

Co-founder & CEO, Parasoft Corp.
Thursday, November 3
8:15 a.m. – 9:00 a.m.



603 Strategies and Tactics for Global Test Automation, Part 2 **NEW** *By Hung Q. Nguyen*

Please see the class description under class 503.

604 Effective Load Testing **NEW** *By Alexander Podelko*

Testing of multi-user applications under realistic and stress loads is really the only way to ensure appropriate performance and reliability in production. This class outlines some issues to consider in performance testing and presents the typical pitfalls from the practical point of view. The list is meant to contrast load testing with functional testing and is mainly based on experience with distributed business applications.

The class is oriented toward people with limited load testing experience, although more experienced attendees could probably find something interesting, too.

605 Using Code Metrics for Targeted Code Refactoring **NEW** *By Andrew Glover*

Oftentimes, candidate code for refactoring is based on subjective determinations. The proper uses of code metrics, such as cyclomatic complexity, fan-in, fan-out and depth of inheritance, can also facilitate the discovery of candidate code that is in need of refactoring.

For example, cyclomatic complexity is adept at spotting methods containing a high degree of conditional logic, which, consequently, can be replaced with polymorphism, as elaborated by Martin Fowler. Additionally, excessively deep hierarchy trees create problematic testing targets, which can be broken out into separate objects with Fowler's Replace Inheritance with Delegation and Collapse Hierarchy patterns. Fan-in and fan-out are quite effective at pinpointing brittle code, which can be refactored into a more stable state with a plethora of patterns, including Extract Hierarchy and Extract Class.

Attendees will leave the presentation with an understanding of seven industry-standard code metrics; moreover, they will have the ability to utilize these metrics to spot "complex" code and will have a grab bag of techniques with which to improve the code.

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“Good speakers. Different views on testing from different sessions/speakers not all spouting the same line lets you make up your own mind about what might work for your own situation.”

—Andrew Kaweski, QA Manager
Sauder Industries Ltd.

606 Automated Database Testing: Testing and Using Stored Procedures

NEW

By Mary R. Sweeney

Today's heterogeneous data environments place an increasingly heavy burden on test engineers. Applications, whether Web-based or client/server, must be tested for seamless interface with the back-end databases; this typically goes far beyond what the popular test automation tools can provide. The intricate mix of client/server and Web-enabled database applications are extremely difficult to test productively. As a result, today's test engineers are increasingly expected to know how to create and use SQL queries, stored procedures and other relational database objects to effectively test data-driven environments.

In this class, you will learn about the increasing importance of testing at the database layer as an important adjunct to current tests. Using demonstrations and code examples, the instructor will present tips and techniques for creating efficient automated tests of the critical database back end using SQL, scripting languages and relational database objects.

You will learn:

- Why testing of database objects and stored procedures is necessary, and why popular automated tools can't keep up.
- How simple and effective automated tests can be created using various programming languages, like Perl and VBScript.
- How to successfully test database objects, such as stored procedures and views, with many examples and code.
- Specific procedures, queries, views and other relational database objects that are valuable for typical testing situations.
- How these automated tests can be productively interleaved with other popular testing tools.

607 Model-Based Testing for Java And Web-Based GUI Applications

By Jeff Feldstein

Classic test automation simply repeats the same tests (with optionally varying data) until it stops failing or the application ships. The problem with this approach is that customers rarely flow through the application in the same sequence as the automation, and thus they are likely to find bugs that the automation missed. Model-based testing is a form of automated testing that brings random and flexible behavior to your automated test cases.

Model-based testing can be used for many types of software or application testing. This class will teach how to implement model-based testing, specifically as applied to Java and Web applications. Part of the course includes a demonstration of model-based testing; you will be able to download the XDE Tester source code used in the demonstration.

Thursday, Nov. 3
2:00 p.m. - 3:30 p.m.

701 Unit Testing for Agile Development, Part 1 By Rob Sabourin

NEW

With the increasing popularity of agile development methods,

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the role of testing is starting earlier in the software development cycle. Testers and developers are challenged to develop software at lightning speed, often using new and untested technologies. This class will show you how development and testing teams can work together to promote and implement improved unit testing. You will learn how to save your company money by finding and fixing bugs long before system testing even starts. Get the ammunition you need to convince management of the economic and business benefits of comprehensive unit testing.

This two-part class addresses unit testing issues within the context of different development life cycle models, especially new agile approaches, and demonstrates the tools and techniques needed to organize for and implement unit testing. The class is taught in workshop style and includes many hands-on group and team exercises, examples and unit testing tool demonstrations.

Due to the interactive nature of these workshops, class size is limited to 30 people.

702 Performance Testing for Managers

By Scott Barber

NEW

Performance testing as an activity is widely misunderstood, particularly by managers and others not directly involved in doing it. This presentation details the most critical things for managers



to know about the performance testing process and ways to improve it. Learning, understanding and applying these nuggets of knowledge to your current or future performance testing projects will dramatically increase your team's chances of success. In this class you will learn:

- How to work with experienced performance testers to get the results you need, even if you can't verbalize them yet.
- Why performance testing should begin well before the application is fully functional, and how to do it.
- How to recognize the difference between "delivery" and "done" as they relate to performance testing, and how to assess and balance the risks inherent in each.
- Ways to better integrate performance testing personnel into the development team effort, and vice versa.
- How to create and maintain a program that will ensure not only that your performance testers have the tools they need, but that they will know how to use them and when to put them away.
- Why extrapolating production loads from data collect-

“Definitely go for it. It’s worth every minute and second of your time”

*—Felix Choy, Software Engineer
Avaya Inc.*

Technical Classes

ed on test systems is, at best, black magic—and what you can do to improve the accuracy of your production estimates.

703 Measuring JUnit Code Coverage **NEW** *By Elliott Rusty Harold*

A comprehensive unit test suite is a necessity for a robust program. But how can you be sure that your test suite is testing everything it should? This class will explore different tools and strategies for measuring code coverage and for verifying that the tests are actually testing what they’re supposed to be testing (and what to do when they’re not). The result is not only better-tested code, but more robust, reliable, bug-free programs.

704 Developing an Effective Performance Testing Strategy **NEW** *By Ross Collard*

This class addresses the tester’s question: How do I test performance in a particular situation? We will review a lightweight methodology for developing your performance testing approach, which is applicable in a broad range of contexts. You will learn how to:

- Factor the business and technical contexts into your performance testing.
- Perform quick initial impact assessments to justify the performance testing.
- Facilitate tuning, debugging, fixing, capacity planning and right-sizing.
- Use risk assessment to focus and prioritize the performance testing efforts.
- Test for scalability.
- Determine what loads to test with.
- Determine what tools, equipment and facilities to have in the test lab.
- Decide what to observe and where to monitor during testing.

705 Testing Financial Software Systems **NEW** *By Bernie Berger*

Financial institutions make money by collecting interest on loans or by trading securities, not by developing software. Consequently, financial services (FS) systems present interesting challenges for software testers. Because FS technology is so broad, a key factor for QA/test success is to recognize the specific context in which these systems are working. We will present three closely related examples as they relate to financial software systems:

- Tradeoffs between performance and accuracy
- The impossibility of test completeness
- Test plan management, and measurement dysfunction

We will examine testing methods for batch processing at retail banks, and contrast them with those used for real-time trading systems.

We will demonstrate a method of maximizing test coverage while minimizing the number of test cases, called “all-pairs,” and apply this method using the Financial Information Exchange (FIX) protocol. FIX is a tag-value messaging standard used to communicate financial data among financial market participants.

Another issue to be discussed is the proper development of the test plan. FS is a regulated industry, and the test plan could be used as evidence in courts in the distant future. Yet the test plan needs to serve the project in the here-and-now. We will explore a multidimensional approach to evaluating test plans, and we’ll see why some measurement techniques are often worse than no measurement at all.

706 A Manager’s Guide to GUI Test Automation **NEW** *By Yuri Makedonov*

Managers find themselves between a rock and a hard place when managing test automation. From one side they are bombarded by a constant stream of sales pitches promoting the “click, click, click” record-and-replay approach. From the other side they are pressed by test automation “gurus” promoting their own, sometimes extremely convoluted, frameworks. So, it’s a challenge for a manager to keep his or her sanity under these conditions and to make sensible test automation decisions on tool and framework selection and test automation management.

In this real-world class, major myths and misconceptions are dispelled, and explanations are provided as to how to keep GUI test automation projects on track.

This presentation includes discussion of:

- Major principles and current industry standards of GUI test automation.
- How to decide if a specific project should be automated or not.
- How to define a scope for test automation.
- How to select a test tool to automate a specific application.
- How to build a team for test automation.
- How to select a test automation framework that fits your test automation needs.
- Potential problems and roadblocks of test automation.
- How to manage test automation projects.

707 Developing Web Security Testing Expertise In Your Organization *By Hung Q. Nguyen*

Security issues are among the highest concerns at many organizations. Nevertheless, developing and sustaining a specialized security testing staff with a breadth and depth of expertise is often beyond the reach of all but the largest companies. As an alternative, developers and test engineers are called on to fill the gap.

The challenge is that Web application security testing is very different from software functionality testing. In this talk, you will learn how to quickly bring your team up to speed on new skills to address security testing needs. To that end, you will learn the key differences between application security testing, network security testing and functional testing; how to think and play like hackers; the top vulnerabilities your team needs to test for; and some of the common tools with which you should be familiar.

Thursday, Nov. 3
4:00 p.m. - 5:30 p.m.

801 Unit Testing for Agile Development, Part 2 **NEW** *By Rob Sabourin*

Please see the description under class 701. Due to the interactive nature of these workshops, class size is limited to 30 people.

802 Differential Testing: a Cost-Effective Automated Test Approach for Large, Complex Systems **NEW** *By Rick Hower*

Differential testing is an automated method you can use in testing large, complex systems. It’s especially useful in situations where part or all of an existing production system is being upgraded, and the end-to-end functionality of the new system is expected to be the same as the old one.

This class uses a detailed case study to provide a descrip-

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tive example of this novel and surprisingly effective approach. The case involves the replacement of a critical subsystem in a telecom billing process. In this class you will:

- Learn how to determine if differential testing will be useful for a project.
- Obtain some useful methods for selecting appropriate automated test data.
- Discover critical factors affecting the success of differential testing.

803 Accelerate Testing Cycles With Collaborative Performance Testing *By Rick Cavallaro*

NEW

Testing and tuning the performance of enterprise Web applications is a complex task, undertaken by a team that may include performance engineers, QA testers, architects, developers, database administrators and related project team members. The process is especially difficult when testers and developers are distributed around the building, around the country or even around the globe.

This session will provide a new methodology for collaborative load testing—an antidote to the iterative, multiweek process based on e-mail and conference calls that most organizations are forced to use today. Attendees will learn:

- The drawbacks of traditional approaches to performance testing.
- How to incorporate a team-based methodology for performance testing.
- A new solution for collaborative load testing in a Web-based environment.
- How this methodology helped a well-known HR software firm with teams distributed across Massachusetts, California and India to shorten test cycles and improve the performance of its flagship product.
- How outsourcing can impact QA efforts, and what you can do to mitigate that impact.

804 Planning and Managing a Beta Test Program *By Duri Price*

NEW

External or internal beta testing can be extremely useful, but it is not free. Here we'll learn how to structure and run a beta test program, be aware of the hidden costs, and get the best return on our investment of time and effort.

805 Worst Testing Practices: How To Fail at Testing Without Even Trying *By Matthew Young*

NEW

Much attention is paid to testing best practices, but as anyone who has tried and failed often says, we learn more from our mistakes than we do from our successes. This class focuses on those mistakes and worst testing practices as a means to show how not to manage and execute a testing effort properly. Through the language of patterns and a universal application of worst practices, attendees will learn all they need to know to make their next testing effort a complete and total failure by applying such techniques as:

- Test planning is for wimps
- Last person hired has to test

- Test late, test once
- Who needs requirements (and what is this analysis you speak of)?
- Our customer is our test team, so why test here?
- If it ain't broke, don't touch it
- We're shipping this afternoon. Think you can test this?

806 Profiling a J2EE Application Using The Eclipse Test and Performance Tools Platform *By Vince Adamo*

NEW

This class will describe how to use the Eclipse Test and Performance Tools Platform (TPTP) to profile a Java application running within a J2EE container application.

TPTP is an Eclipse technology project that provides a framework and services for test and performance tools. In this class, you will learn about the tracing and profiling tools provided within this framework to support Java application performance-tuning activities.

This tutorial will provide step-by-step instructions on configuring, profiling and analyzing an example Java application deployed to a JBoss J2EE application server. No previous experience in profiling Java applications is required, but a general understanding of developing and testing Java applications will be beneficial.



807 Coding Standards and Unit Testing—Why Bother? *By Mark Lambert*

NEW

Many developers think that the industry best practices of coding standards and unit testing are a waste of time: They require additional effort, but they don't seem to make your life any easier, or your code any better. This is not surprising.

This class explains how developers can apply coding standards and unit testing to improve their code and prevent the number of problems they need to identify, diagnose and fix over the course of the project. The first half teaches you how to apply coding standards to prevent errors related to code functionality, security and performance. The second part focuses on how you can extend traditional unit testing to expose reliability problems that could lead to instability, unexpected results or even crashes or security vulnerabilities. We will also discuss how these test cases can be leveraged to build a project-wide automated regression system that runs in the background each night and immediately alerts the team when code modifications or additions break previously verified functionality.

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Vince Adamo is a Senior Performance Architect for 360Commerce Corp., a retail-store and enterprise software vendor. Previously, he worked for five years as a team lead for performance engineering/software development at Vignette Corp., and prior to that at Valmet Auto-

mation and United Gas Pipeline.

Mr. Adamo has more than 20 years of experience developing and testing software and managing both development and performance management teams. He has a Master of Computing Science degree from Texas A&M University.

Scott Barber is chief technology officer at PerfTestPlus Inc. His specialty is context-driven performance analysis for multi-user distributed systems. He focuses on teaching and performing practical performance testing and analysis. His project-level experience has been evenly split between testing and analyzing performance for complex systems and mentoring organizations in the development of customized corporate methodologies based on his performance testing approach.



Mr. Barber has a master's degree in IT from American Intercontinental University. He writes Peak Performance, the performance testing column in Software Test & Performance magazine, and he also speaks at many technical conferences.

Over the past 15 years, **Bernie Berger** has been a testing contractor, independent consultant, QA manager, systems analyst, supervisor and test engineer at a host of major firms in New York's financial community; he is currently assistant vice president of quality assurance at Citigroup Derivatives Markets. He is active in the greater QA community, lecturing and publishing in various professional venues and periodicals such as STAR and STQE. He also owns Test Assured, a software quality consulting business.



Mr. Berger's volunteer work includes moderating several message groups, including Tester-Career-Support, a free, nonprofit Yahoo group dedicated to helping QA folks get better jobs, and QA on Wall Street, the goal of which is to improve the state of financial software systems testing.

Mr. Berger's volunteer work includes moderating several message groups, including Tester-Career-Support, a free, nonprofit Yahoo group dedicated to helping QA folks get better jobs, and QA on Wall Street, the goal of which is to improve the state of financial software systems testing.

Ron Bodkin is the founder of New Aspects of Software, which provides consulting and training on application development and architectures, with an emphasis on performance management and effective uses of aspect-oriented programming (AOP). He is also leading the development of performance management tools for Java and is a member of AspectMentor, a consortium of AOP experts.



Mr. Bodkin previously worked for the AspectJ group at Xerox PARC, where he led the first AOP implementation projects and training for customers. Prior to that, he was a founder and the CTO of C-bridge, a consultancy that delivered enterprise applications using frameworks for Java, XML and other Internet technologies. C-bridge grew to 900 employees and a successful IPO in December 1999.

Mr. Bodkin frequently speaks and presents tutorials at conferences and for customers, including presentations at Software Development, TheServerSide Symposium, Eclipse-Con, OOPSLA, Edge and AOSD.

Hans Buwalda leads LogiGear Corp.'s action-based testing (ABT) research and development, and he oversees the practice of ABT methodology. Prior to joining LogiGear, he served as project director at CMG

The Netherlands, where he was the original architect behind the Action Words approach, an integrated method for planning, managing and deploying software testing and test automation, now widely used throughout the industry.

Mr. Buwalda is an internationally recognized expert specializing in action-based test automation, test development and testing technology management. He's also a speaker at international conferences, delivering tutorials and workshops, as well as presenting testing concepts such as ABT, the three Holy Grails of test development, soap-opera testing, and testing in the cold. Recently, Mr. Buwalda co-authored "Integrated Test Design and Automation." He holds an M.S. in computer science from Free University, Amsterdam.



Jim Carty is president of IS Value Corp., a company focused on helping clients improve the performance and productivity of their information systems. He has more than 23 years of experience in information systems in a variety of roles in management, finance, marketing, operations and

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Conference and Tutorial Faculty

development. His consulting background includes working for PricewaterhouseCoopers, advising the company on the merger of the Nasdaq and the American Stock Exchange. He has also been a CIO at several companies focusing on e-commerce initiatives and organizational change.

Mr. Carty's insights into IT and the markets have been published in magazines and newspapers and broadcast on radio, as well as being the topic of numerous speaking engagements. He has served on the faculty at Columbia University, teaching courses in e-commerce and emerging technologies, and he was most recently a managing director of systems at PNC Financial Services.



In his five years at Empirix, **Rick Cavallaro**, senior applications engineer, has worked with hundreds of companies helping to ensure the performance of their most critical Web applications. A 10-year veteran of the software industry, he specializes in testing and application development.



Prior to joining Empirix, Mr. Cavallaro served in engineering roles at Aviv, Workstation Solutions and Revelation Software. He holds a BSEE degree from the University of Massachusetts, Lowell.

Clyneice Chaney, quality manager at Project Performance Corp., brings more than 16 years of testing, quality assurance and process improvement experience. She is an American Society for Quality Certified Quality Manager and a Quality Assurance Institute Certified Quality Analyst. She also holds the Project Management Institute's Professional Project Manager Certification and is a 2002 Georgia Oglethorpe Examiner (State Quality Award).

Focusing on process improvement and procedure development in the software testing and quality assurance areas, Ms. Chaney has successfully led process improvement, methodology development and re-engineering projects for organizations wishing to



improve their software development, testing processes and tools implementation. Ms. Chaney has presented at the Software Engineering Institute's SEPG Conference, the American Society for Quality's Quality Manager's conference and the 2004 Software Test & Performance Conference.

Ross Collard is president of Collard & Co., a New York consulting firm. While he specializes in software testing and quality assurance, his consulting assignments have included strategic planning on the use of information technology for competitive advantage, the facilitation of quality improvement teams, management of large software development projects and the development of software engineering practices.



Mr. Collard has made keynote presentations at major software conferences, published articles, and conducted seminars on information technology topics for businesses, governments and universities, including George Washington University, Harvard, New York University and U.C. Berkeley. He holds a B.E. in electrical engineering from the University of Auckland, New Zealand, an M.S. in computer science from the California Institute of Technology and an M.B.A. from Stanford.



Elfriede Dustin is an SQA manager at Symantec Corp., author of the book "Effective Software Testing" and lead author of "Automated Software Testing" and "Quality Web Systems." She is currently writing the "Security Testing Handbook," along with two security experts, to be published by Symantec Press (spring 2006). She has also authored various white papers on the topic of software testing and is a frequent speaker at various software testing conferences.

Ms. Dustin holds a B.S. in computer science and has more than 15 years of IT experience in various positions, such as QA director for BNA Software and assistant director for integration test and deployment at CSC on the IRS modernization effort.

Jeff Feldstein is currently a manager of software development at Cisco Systems Inc. During his 24-year career, he has been a software developer, tester, development manager and computer consultant; for the past five years, he has been involved with software testing and has managed a



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team of developers who write software test tools. His specialties have included internetworking, real-time embedded systems, communications systems, hardware diagnostics and firmware, databases and test technologies. Mr. Feldstein has spoken at technical conferences nationwide.

Matthew Fisher is a senior security engineer for SPI Dynamics and has more than 12 years of experience in the information technology industry. Prior to joining SPI Dynamics, he worked at Computer Sciences Corp. and at Digex, where he acted as lead technical advisor on large-scale enterprise Web applications for Fortune 500 companies.



Mr. Fisher currently provides Web application security consulting and technical advice for a variety of clients, including government, health care, finance and manufacturing organizations. He has multiple certifications from Microsoft, Checkpoint and ISC2, including CNA, MCP, CCSA, CCSE and CISSP, and has spoken on the topic of Web application security at numerous conferences for the Department of Defense, civilian federal agencies and the commercial sector.

Martin Fowler is the chief scientist for ThoughtWorks Inc. and is a renowned author, software consultant and speaker, bringing more than 14 years of experience in helping corporations utilize object technology for mission-critical information systems.



Prior to joining ThoughtWorks, Mr. Fowler collaborated with the company on the development of an Enterprise JavaBeans-based e-business application for a Fortune 500 organization.

During his tenure as an independent software consultant, Mr. Fowler has helped pioneer the practical use of some of the industry's leading development techniques, including UML (Unified Modeling Language),

Extreme Programming, and Refactoring and Analysis Patterns.

His literary achievements include authoring "Refactoring: Improving the Design of Existing Code"; the award-winning "UML Distilled, Second Edition: A Brief Guide to the Standard Object Modeling," "Analysis Patterns: Reusable Object Models," "Planning Extreme Programming" and "Patterns of Enterprise Application Architecture," which has also won numerous awards. He also edits a signature series of books for Addison-Wesley.

Mr. Fowler speaks at many international conferences on software development. He was program chair of XP 2005 and

of Agile Universe in 2001. He also serves as a columnist for IEEE Software magazine and is a founder of the Agile Alliance and co-author of the Manifesto for Agile Software Development.

Robert L. Galen is a senior QA manager at Thomson/Dialog Corp. in Cary, N.C. He is also a principal at RGalen Consulting Group, LLC, and has held director-, manager- and contributor-level positions in both software development and quality assurance organizations. He has nearly 25 years of experience working in a wide variety of domains, from hard, real-time systems to Web-based information systems.

Mr. Galen is an active member of ACM, ASQ, IEEE/CS and PMI. He is passionate about and committed to the profession of software engineering and product development. He speaks frequently at international conferences (STAR, ASM/SM, PSQT/PSTT and QAI) and to local North Carolina organizations on topics related to software development, project management, software testing and team leadership.

Mr. Galen is a certified Scrum Master, a member of the Agile Alliance and the author of "Software Endgames" (Dorset House, 2005).



Andrew Glover is the founder and CEO of Vanward Technologies, a Washington, D.C., company specializing in the construction of automated testing frameworks and tools. Before founding Vanward Technologies, Mr. Glover was a software architect for Netwhistle.com, where he designed and led a development

team in the construction of an Internet-based portal for monitoring network applications.

Mr. Glover's career includes leadership in software development for IBM, Philips Electronics and Procter & Gamble. He is a graduate of George Mason University in Fairfax, Va., and is a frequent speaker at industry events. Mr. Glover is a co-author of "Java Testing Patterns" (Wiley, 2004).

Robin F. Goldsmith has been president of the Go Pro Management Inc. consultancy since 1982. He works directly with and trains professionals in business engi-



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neering, requirements analysis, software acquisition, project management, quality assurance and testing. Previously he was a developer, a systems programmer/DBA/QA and a project leader with the City of Cleveland, leading financial institutions, and a "Big 4" consulting firm.

Author of numerous articles and the recent book "Discovering REAL Business Requirements for Software Project Success," and a frequent speaker at leading professional conferences, Mr. Goldsmith was formerly international vice president of the Association for Systems Management and executive editor of the Journal of Systems Management. He chaired BOSCON 2000 and 2001 and ASQ Boston Section's Annual Quality Conferences, and he is a member of the ASQ Software Division Methods Committee. Mr. Goldsmith has an A.B. from Kenyon College, an M.S. from Penn State University and a J.D. from Boston University.

Michael Hackett is a founding partner of LogiGear Corp. and is responsible for the direction and development of the company's training program. He has in-depth experience in software engineering and the testing of applications developed for deployment across multiple platforms.

Mr. Hackett has helped companies such as Palm Computing, Oracle, CNET, Adobe Systems, PC World and The Well successfully produce, test and deploy applications ranging from business productivity to educational multimedia titles—in English as well as other languages.

Mr. Hackett writes and teaches a software testing curriculum for LogiGear University, and for the University of California at Berkeley Extension. He is also co-author of "Testing Applications on the Web: Test Planning for Mobile and Internet-Based Systems," Second Ed., and holds a B.S. in engineering from Carnegie Mellon University.



Elliotte Rusty Harold is an adjunct professor of computer science at Polytechnic University, where he teaches XML and object-oriented programming. His Cafe au Lait Web site has become one of the most popular independent Java sites on the Internet, and his spinoff site, Cafe con Leche, has become one of the most popular XML sites.

Mr. Harold is a frequent contributor to IBM developer-

Works on subjects ranging from XML to Java to software testing. His books include "Effective XML," "Processing XML with Java" and "Java Network Programming." He's currently working on the XOM API for processing XML and the Jaxen XPath engine.



Rick Hower is a consultant with more than 12 years of experience in software quality assurance, testing, process improvement and test automation. He has worked on projects in areas such as finance, government, telecommunications, transaction processing, imaging/workflow systems and Web/Internet technology.

Mr. Hower has provided services for companies such as Oracle, AOL, Visa, government agencies and a wide variety of other organizations. Since 1996, he has also authored and maintained the softwareqatest.com Web site.

Timothy Korson has had a decade of substantial experience working on a large variety of systems developed using modern software engineering techniques. This experience includes distributed, real-time, and embedded systems, as well as business information systems in an *n*-tier, client/server environment. Dr.

Korson's typical involvement on a project is as a senior management consultant with additional technical responsibilities to ensure high-quality, robust test and quality assurance processes and practices.

The principal of Korson Consulting, Dr. Korson also teaches at Southern Adventist University, has authored numerous articles, and has co-authored a book, "Object Technology Centers of Excellence" (Manning Publications). He has delivered many lectures at major international conferences and has contributed to the discipline through original research. Dr. Korson earned a Ph.D. in business information systems at Georgia State.



Mark Lambert is a member of Parasoft's Professional Services team, where he specializes in the application of automated error-prevention tools to the development process.

With more than eight years of practical Java experience, Mr. Lambert has a hands-on approach to development and the use of tools to improve qual-



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ity throughout the development process. He has been a speaker at numerous corporate and industry events.

Yury Makedonov was trained as a researcher and worked in an R&D organization dealing with composite materials. He has a Ph.D. degree in physics and mathematics. He is now using his skills and knowledge to improve software quality.

Dr. Makedonov has 10 years of testing experience. Currently, he is working as a QA manager, a test automation manager and a senior consultant for the Centre of Testing and Quality at CGI Group Inc., a leading Canadian provider of end-to-end information technology and business process services.



Hung Q. Nguyen is CEO and founder of LogiGear Corp., a software quality engineering firm offering training,

testing services and test automation products. He is author and co-author of several software testing books, including "Testing Applications on the Web," Second Ed., and "Testing Computer Software," Second Ed.



Mr. Nguyen writes and teaches a software testing curriculum for LogiGear University, as well as for U.C. Berkeley and the U.C. Santa Cruz Extension. He holds a B.S. in quality assurance from Cogswell Polytechnical College, is a graduate of the Stanford Graduate School of Business Executive Program, and is a Certified Quality Engineer.

Thomas O'Mara has more than 25 years of experience with PC-based computing, ranging from Fiber Optic Gyroscope data acquisition using the stack-based FORTH language to Web-based applications utilizing the .NET Framework and ASP.NET. In between, there were C, Visual Basic, and various database and middleware initiatives.

Mr. O'Mara has been working with and writing articles about .NET technology since early 2001. He has considerable direct performance-tuning experience on a Web-based ASP.NET banking software application for large credit unions.



eight years of experience in performance engineering and more than 15 years of overall experience in the software industry. He frequently speaks and writes about performance engineering and load testing.

A part of Dr. Podelko's collection of performance-related links and documents is shared on www.AlexanderPodelko.com. He holds a Ph.D. in computer science from Gubkin University and an MBA from Bellevue University.



Duri Price works at Exceed Training to redevelop and enhance the Software Testing Methodology series of classes, including more than 140 hours of instruction material.

With more than seven years of senior QA management experience, Mr. Price has built and led the QA function for a variety of leading technology organizations, including Interling Software, DDI/STlabs, Testing Testing 123 and eSociety. While specializing in the complex process of building an efficient QA department from the ground up, he has also audited and reorganized existing QA and testing organizations to fit a company's changing technical, organizational and business environments.

In 2001 and 2002 Mr. Price worked for Hall-Kinion as a QA/test management consultant, creating and leading the testing efforts for DoubleJump and WRQ.

BJ Rollison is a technical trainer in the Engineering Excellence Group at Microsoft, where he designs and develops an intensive, hands-on technical training curriculum for new and experienced test engineers. He started his professional career in the industry working on developing custom solutions for hospitals and local government agencies in Japan. In 1994 he joined the Windows 95 project at Microsoft, focusing on the internationalization of the Windows operating system.

In 1996, Mr. Rollison became a test manager in the Internet Client and Consumer Division, responsible for several client products and a Web server. He moved to Microsoft's Internal Technical Training group in 1999 as the director of test training, responsible for planning and organizing training for more than 6,000 test engineers. He also teaches software testing courses at the University of Washington and sits on the advisory boards for software testing certificate programs at the University of Washington and Lake Washington Technical College.



Alexander Podelko is principal performance engineer at Hyperion Solutions in Stamford, Conn. He has

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Robert Sabourin, P.Eng., has more than 20 years of management experience leading teams of software development professionals to consistently deliver projects on time, on quality and on budget.

Mr. Sabourin is an adjunct professor of software engineering at McGill University who often speaks at conferences around the world on software engineering, SQA, testing and management issues.



Alfred Sorkowitz, now an independent software consultant, was a computer scientist with the Department of the Navy, responsible for developing real-time, software-intensive embedded systems. Prior to joining the Department of the Navy, he was director of the Standards and Quality Control staff, U. S. Department of Housing and Urban Development.



The staff was responsible for software standards and SQA for all in-house as well as contractor-developed software. While at HUD, Mr. Sorkowitz initiated a successful testing procedure to improve the quality of unit testing that utilizes automated tools and testing metrics.

Mr. Sorkowitz has published papers and has presented seminars on software metrics, SQA and testing at conferences sponsored by the IEEE Computer Society, ACM and the British Computer Society.

Mary R. Sweeney has been developing, using and testing relational database systems for 20 years, starting at Boeing and then with Software Test Labs. She has taught automated testing using Visual Test and Visual Basic and SQL database testing techniques to many companies, including Microsoft, Boeing, Intel, Hyperion, Baseline Financial, Fidelity Investments, Reuters, Unilever and Washington Mutual.



Ms. Sweeney writes articles on test automation and authored "Visual Basic for Testers" (Apress, 2001). Currently she is a college professor and also does independent consulting and training

through Exceed Training. Ms. Sweeney has degrees in mathematics and computer science from Seattle University and is a Microsoft Certified Professional (MCP) in SQL Server.

Joe Toomey is a senior software engineer at the IBM Rational lab in Lexington, Mass. He has been a committer on the Eclipse Test and Performance Tools project since its inception in 2002, leading the Test Model subgroup and acting as committer for the Test Model team and the Execution Environment Control group.

Mr. Toomey also participates in several IBM Architecture groups. He received a B.S. in mathematics and computer science from Carnegie Mellon University in 1993 and joined Rational Software in 1997. Prior to his work on TPTP, he was a developer on several Rational products, including Rational Robot, Rational Quality Architect and Rational XDE Component Test.



Christopher Valorose is a senior principal SQA engineer at Symantec. He has 11 years of experience in software quality assurance and is currently responsible for automated testing across multiple products.

Before Symantec, Mr. Valorose worked for Axent Technologies as a SQA engineer; there, he was responsible for implementing automation, was the lead SQA engineer for several projects, and was in charge of test planning, execution and reporting for current and new projects. He has a B.S. in electrical engineering from Merrimack College.

Matthew Young is a senior software systems engineer and project manager for SAIC in Tucson, Ariz. Having served in roles ranging from software development through project management, he has acquired the battle scars that go with life in the trenches of software and systems development.

Armed with a B.S. in computer science and engineering from Bucknell University and an M.S. in systems engineering from Johns Hopkins, Mr. Young has spent most of his career as a defense contractor, working on such projects as Differential GPS, Force Structure Modeling and Simulation, and other large-scale system efforts.

Always driving teams toward solid engineering principles and realistic planning, Mr. Young continues to lead efforts to move software engineering away from magic and sorcery and into a true engineering discipline. Mr. Young is the author of numerous white papers on system/software testing and is co-author of "Java Testing Patterns" (Wiley, 2005).

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MONDAY October 31

REGISTRATION OPEN
4:00 p.m. - 7:00 p.m.

TUESDAY November 1

REGISTRATION OPEN
8:00 a.m. - 7:00 p.m.

WEDNESDAY November 2

REGISTRATION OPEN 7:30 a.m. - 7:00 p.m.

KEYNOTES: MIKE MILINKOVICH 8:15 a.m. - 9:00 a.m.

MARTIN FOWLER

EXHIBITS OPEN 3:00 p.m. - 7:30 p.m.

ATTENDEE RECEPTION

TUTORIALS

TECHNICAL CLASSES

9:00 a.m. - 5:00 p.m.

9:15 a.m. - 10:45 a.m.

11:00 a.m. - 12:30 p.m.

1:30 p.m. - 3:00 p.m.

T-1	Delivering Test Automation Success Through People, Methods & Tools - Buwalda	101	Fundamental Rules of Security Testing - Dustin	201	Pinpointing and Exploiting Specific Performance Bottlenecks - Barber	301	Just-in-Time Testing Techniques and Tactics, Part 1 - Sabourin
T-2	Twenty-One Ways to Spot—and Fix—Requirements Errors Early - Goldsmith	102	Putting the User Back in User Acceptance Testing - Goldsmith	202	Software Endgames: How to Finish What You've Started - Galen	302	Overcoming Requirements-Based Testing's Hidden Pitfalls - Goldsmith
T-3	Testing Quasi-Agile Projects: Practical Strategies for Today's Iterative Development Environment - Korson	103	How to Optimize Your Web Testing Strategy - Nguyen	203	Seven Low-Overhead Software Process Improvement Methods - Goldsmith	303	Web Performance Testing: Lessons Learned - Nguyen
T-4	Testing Techniques: Theory and Application - Rollison	104	Performance Tuning ASP.NET Applications - O'Mara	204	Learning From Failures Before They Happen: Failure Analysis Techniques for Software Engineering - Young	304	Lessons Learned in Test Automation, Part 1 - Dustin
T-5	Using Metrics to Improve Software Testing - Sorkowitz	105	How to Turn Your Testing Team Into a High-Performance Organization - Hackett	205	Integrating the Testing Team Into the Software Development Life Cycle - Dustin	305	Metrics: How to Track Things That Matter - Chaney
T-6	Hands-on Testing Patterns: Best Practices From the Trenches - Young	106	Creating Your Own Test Automation Tool - Valorose	206	Database Security: How Vulnerable Is Your Data? - Sweeney	306	Verifying Software Robustness - Collard
		107	Better Web Stress Testing - Sabourin	207	Load Generation in Complex Environments - Podelko	307	Recruiting, Hiring, Motivating and Retaining Top Testing Talent - Feldstein

THURSDAY November 3

REGISTRATION OPEN 7:30 a.m. - 4:00 p.m.

KEYNOTE: ADAM KOLAWA 8:15 a.m. - 9:00 a.m.

EXHIBITS OPEN 12:00 p.m. - 4:00 p.m.

ATTENDEE LUNCHEON 12:30 p.m. - 2:00 p.m.

TECHNICAL CLASSES

3:30 p.m. - 5:00 p.m.		9:15 a.m. - 10:45 a.m.		11:00 a.m. - 12:30 p.m.		2:00 p.m. - 3:30 p.m.		4:00 p.m. - 5:30 p.m.	
401	Just-in-Time Testing Techniques and Tactics, Part 2 - Sabourin	501	Seven Steps to Building a Better Bug Workflow System - Sabourin	601	Designing and Utilizing Test Matrices - Price	701	Unit Testing for Agile Development, Part 1 - Sabourin	801	Unit Testing for Agile Development, Part 2 - Sabourin
402	Building Collaborative Performance Testing and Tuning Teams - Barber	502	Rapid Business-Driven Testing - Chaney	602	Managing Culture Shock: A Journey to Organizational Change - Chaney	702	Performance Testing for Managers - Barber	802	Differential Testing: A Cost-Effective Automated Test Approach for Large, Complex Systems - Hower
403	Making the ROI Business Case for Testing Techniques - Goldsmith	503	Strategies and Tactics for Global Test Automation, Part 1 - Nguyen	603	Strategies and Tactics for Global Test Automation, Part 2 - Nguyen	703	Measuring JUnit Code Coverage - Harold	803	Accelerate Testing Cycles with Collaborative Performance Testing - Cavallaro
404	Lessons Learned in Test Automation, Part 2 - Dustin	504	Testing Tools Inside Eclipse - Toomey	604	Effective Load Testing - Podelko	704	Developing An Effective Performance Testing Strategy - Collard	804	Planning and Managing a Beta Test Program - Price
405	Using Scrum to Manage the Testing Effort - Galen	505	Testing XML - Harold	605	Using Code Metrics for Targeted Code Refactoring - Glover	705	Testing Financial Software Systems - Berger	805	Worst Testing Practices: How to Fail at Testing Without Even Trying - Young
406	Exploiting Web Application Code: The Methodologies and Automation of SQL Injection - Fisher	506	Performance Management Throughout the Application Life Cycle - Bodkin	606	Automated Database Testing: Testing and Using Stored Procedures - Sweeney	706	A Manager's Guide to GUI Test Automation - Makedonov	806	Profiling a J2EE Application Using the Eclipse Test and Performance Tools Platform - Adamo
407	Failure Modes: Understanding Common Failures in Application Performance - Bodkin	507	Avoiding the Finger of Blame: Bringing Development and Testing Together With the Business Side - Carty	607	Model-Based Testing for Java and Web-based GUI Applications - Feldstein	707	Developing Web Security Testing Expertise in Your Organization - Nguyen	807	Coding Standards and Unit Testing—Why Bother? - Lambert

Pricing and Registration

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Exhibits Only November 2-3	FREE	FREE	FREE	\$50

All prices are in US dollars

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- Admission to exhibits
- Conference materials
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- Continental breakfast, coffee breaks
- Lunch on Thursday

Exhibits-Only Registration Includes:

- Admission to keynotes
- Admission to exhibits
- Attendee reception Wednesday night

Registration Questions

Contact Donna Esposito at +1-415-785-3419, or e-mail at desposito@bzmedia.com.

